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THE VIABILITY OF AGRICULTURE IN MARIN COUNTY

Prepared for  
Board of Supervisors  
The County of Marin

**DRAFT**

Baxter, McDonald & Smart, Inc.  
San Francisco, California

September, 1973

**SEDWAY / COOKE**  
Urban Planners  
San Francisco, Calif.



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San Francisco, Calif.



# Baxter, McDonald & Smart, Inc.

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September 11, 1973

**DRAFT**

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Marin County Board of Supervisors  
Civic Center  
San Rafael, California 94903

Gentlemen:

In accordance with our contract of May 15, 1973, we are pleased to submit the attached report on the Viability of Agriculture in Marin County. Our findings indicate that agriculture can be a viable long-term land use in western Marin County providing the Board supports its goal of preserving agriculture with adequate policies. Agricultural zoning has been one such policy. This report recommends others.

The report's analysis and conclusions are our own and we bear full responsibility for their validity. Nevertheless, we wish to acknowledge the numerous organizations and individuals whose assistance and advice have been essential to its preparation. County agencies -- particularly the Planning Department and the offices of the assessor and farm advisor -- have served as ready sources of information and advice. The University of California's Agricultural Extension Service has provided us with invaluable technical and comparative information, both through its offices in Davis and Berkeley and through its farm advisors in the various counties. Marin ranchers, finally, have been generous with their time and knowledge and entire cooperative with our survey efforts.

We have enjoyed working with the County on this project and hope that it will assist the Board and the people of Marin in their efforts to plan for the future of the County.

Yours very truly,

Patricia Cooper-Willis  
Patricia Cooper-Willis

William Dillinger  
William Dillinger

Peter W. Schaafsma  
Peter Schaafsma

Approved:  
Baxter, McDonald & Smart, Inc.

Angus N. McDonald  
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The consultant's draft of the final report is intended for review by the County Board of Supervisors, the Agricultural Advisory Board and all other interested parties.





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## I. SUMMARY

The question of the viability of agriculture in Marin is, simply stated, whether or not a rancher can and will stay in business or whether others will enter agriculture over the foreseeable future. This definition of the term viability takes into consideration all of the factors which we have found to be relevant to the pursuit of agriculture in Marin.

The first component of the definition, whether a rancher can stay in business, constitutes an evaluation of the economics of ranching in Marin County. Inputs for this evaluation were obtained from agricultural economists of the University of California Agricultural Extension Service, farm advisors of various counties, local ranchers, and local agricultural businessmen. In addition, a survey was conducted on a randomly selected stratified sample of the ranching population.

Dairy, beef, and sheep operations were studied to determine the extent of their problems and to assess their relative performance standards. Used in conjunction with information provided by farm advisors of other counties, this material allowed us to assess the competitive position of Marin County in relation to the more agriculturally productive regions of the state. Cash flow statements were prepared to determine the actual level of income being received by Marin's dairymen and livestock operators. Management practices were also assessed and judged in relation to the standards of highly competitive operations.

From this evaluation, we have determined that it is possible to make a living from ranching in Marin at the present time. However, the means now available to increase productivity must become more widely utilized if this economic position is to be maintained.

The second component, whether a rancher will stay in business, can best be described as an uncertainty over the land use -- residential or agricultural --





that will be predominant in west Marin in future years. Because of the potential value of these lands for residential development, making management decisions which commit the land to continued agricultural use means forgoing possible large capital gains from its sale for development purposes. The possibility that increased densities will be permitted in west Marin, however uncertain, has led many ranchers to regard their operations in an interim fashion: they put in enough work to cover their expenses and taxes while waiting for an optimum time when they can sell or develop.

Even those who do not wish to sell or develop are affected by the uncertainty. Due to the incompatibility of agriculture with high-intensity development, these ranchers are uncertain about their future prospects in the event that development is permitted. Their uncertainty makes them hesitant about taking on long-term loans for necessary capital improvements.

However, the analysis of economic and social attitudes done during the present study leads to the conclusion that

GIVEN SOME ASSURANCE THAT RURAL MARIN WILL BE PROTECTED FROM INCOMPATIBLE DEVELOPMENTS AND THAT PRIORITY IS GIVEN TO THE NEEDS OF AGRICULTURE WITHIN ITS REALM, PEOPLE WILL CONTINUE TO RANCH IN MARIN OVER THE FORESEEABLE FUTURE.

The present study has developed recommendations in several areas to help assure the accuracy of this conclusion. These can be briefly summarized as follows:

1. The County should improve its ability to assist ranchers in making necessary ranch improvements. Programs should be oriented to strengthening County capability for advisement and aggressive demonstration of benefits available through sound management practices. Some financial assistance may be necessary in order for the dairy industry to comply with environmental pollution guidelines.





2. The County should adopt policies designed to ensure that any rural residential development is compatible with its agricultural neighbors. We recommend a combined policy of prohibition of development which can be shown to be incompatible with health and environmental considerations and the encouragement of clustering the development rights permitted under the present A-60 zoning in locations having a minimal intrusive effect upon agriculture. Development rights should be purchased where such developments would not be conducive to continued agriculture.

3. Alternative land uses of both agricultural and recreational natures are available and should be encouraged. In the areas around Nicasio and Tomales Bay, these recreational land uses would be a more viable alternative than residential development in terms of agricultural compatibility.



## II. BACKGROUND OF THE STUDY

### A. History

The question of whether agricultural operations could or would survive in California's Marin County has concerned elected officials and citizens for nearly a generation. The large amounts of open land and pastoral land uses contribute to an overall level of environmental quality that has made Marin the most appealing<sup>1)</sup> residential location in the San Francisco Bay Area. Yet this very appeal leads to the pressures that might doom agriculture in the county.

The aesthetic qualities of west Marin in combination with its proximity to urban centers has made it a very desirable area for both residential and recreational types of development. Where isolation once ensured low land values and agricultural permanency due to the lack of suitable higher uses, this same isolation has now become an attractive force bringing people and higher land values to the area. The dramatic appreciation in value created an atmosphere of transition; it began to be assumed that these lands, like similar agricultural lands elsewhere in the state, would inevitably go the route of development. Dairies and livestock operations continued to operate, but with no assurances that rising land values and the associated tax costs would stay below the limit they could afford to pay, even should they decide to forego the gains available from selling their land. Then, in 1965, the State Legislature provided for such an assurance with the passage of the Land Conservation Act (Williamson Act). This Act stipulated that agricultural lands would be taxed, not according to their market value but on the basis of the income produced from those lands, provided the landowner was willing to restrict his land to certain enumerated agricultural or open space uses for a 10 year period.

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<sup>1)</sup> An indication of that appeal is the fact that, in 1970, Marin had the second highest average per capita income in the United States.





Under the provisions of the Act, the county set the boundaries of an Agricultural Preserve Zone within which landowners using their land for agricultural purposes became eligible for tax reduction. A landowner desiring the reduced assessment would apply to the county and, upon approval, sign an agreement which provided for automatic annual renewal. Each year the agreement is automatically renewed for a 10-year period unless it is canceled by either party. If the agreement is terminated, the tax reduction is gradually removed over a 10-year period.

A significant number of ranchers took advantage of the Act as shown in Table II-1, but many others were not willing to commit themselves to agriculture for the 10-year period. In some cases, where title to the property was shared between family members, agreement could not be reached on what should be done. In other cases, however, ranchers apparently did not want to put themselves in a position where they could not take advantage of the high prices being offered by developers or speculators.

Actual intensive development has not yet significantly intruded on the western agricultural areas, but the invasion of the orchards and dairies of Novato and east Marin and expanding public concern about the environment, continues to stimulate discussion over the future of west and central Marin. Admidst great controversy, the Board of Supervisors decided that intensive development was incompatible with the preservation of agriculture in the county and embarked on a program of rezoning properties within the previously established agricultural preserve to permit a maximum of one residence for every 60 acres of land. The limits of this preserve and the current status of A-60 zoning are shown in Figure II-2.





TABLE II-1

USE OF THE WILLIAMSON ACT IN MARIN'S AGRICULTURAL PRESERVE ZONE<sup>1)</sup>

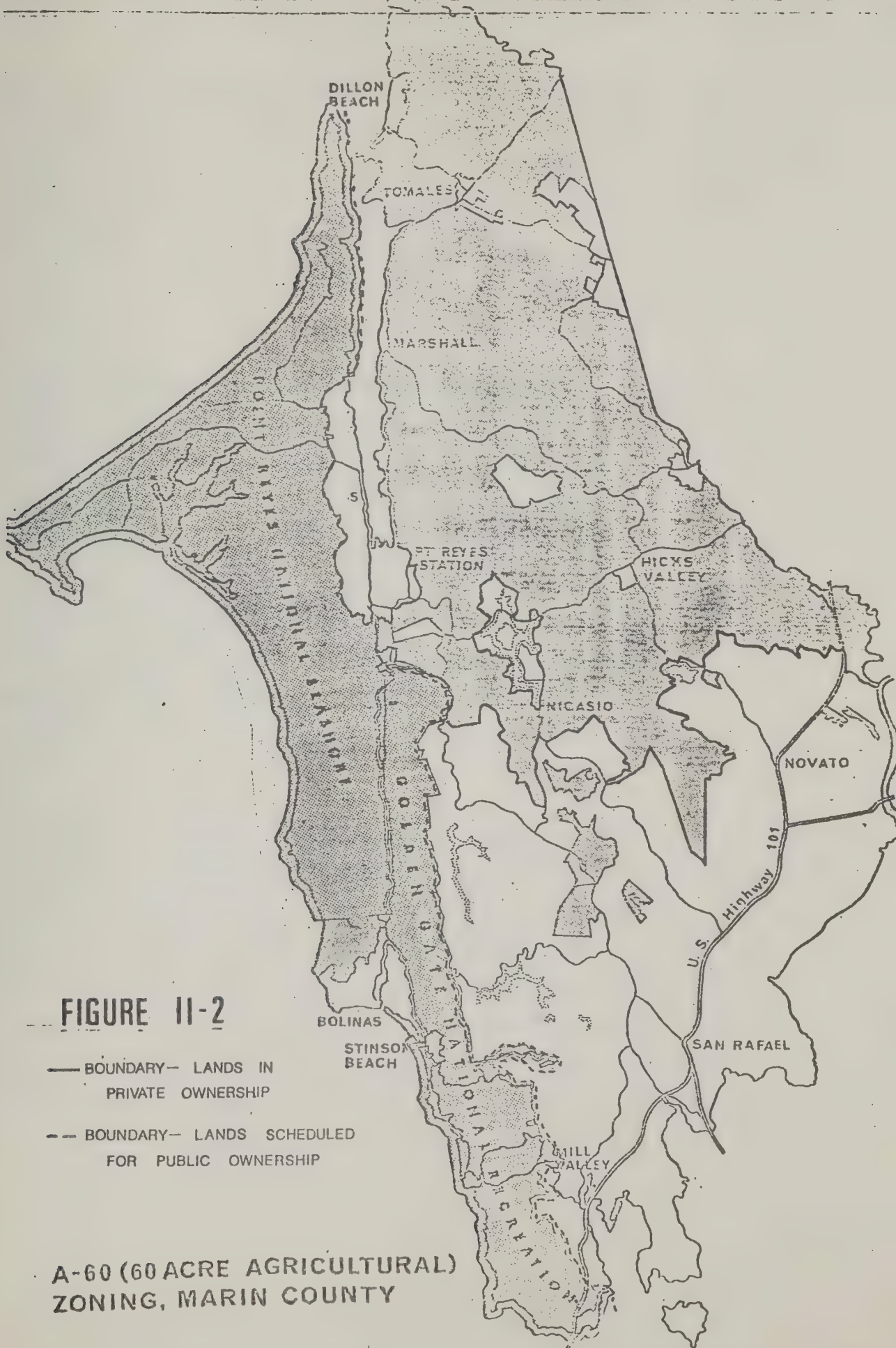
|   | <u>Acres</u>               |                | <u>Parcels</u> |                | <u>Assessed Value</u>            |                |
|---|----------------------------|----------------|----------------|----------------|----------------------------------|----------------|
|   | <u>Number</u>              | <u>Percent</u> | <u>Number</u>  | <u>Percent</u> | <u>\$</u>                        | <u>Percent</u> |
| Under Williamson<br>Act Contract        | 90,201.94                  | 54.98          | 368            | 67.77          | \$5,504,463                      | 40.03          |
| Not Under<br>Williamson<br>Act Contract | <u>73,848.06</u>           | <u>45.01</u>   | <u>175</u>     | <u>32.22</u>   | <u>\$8,243,871</u> <sup>2)</sup> | <u>59.96</u>   |
| Total                                   | 164,050                    | 100.00         | 543            | 100.00         | \$13,748,334                     | 100.0          |
| Total rural assessed valuation          | \$16,175,957 <sup>3)</sup> |                |                |                |                                  |                |
| Total county assessed valuation         | 840,829,035                |                |                |                |                                  |                |
| Rural as percent of total               | 1.92                       |                |                |                |                                  |                |

1) Includes only parcels over 10 acres in size.

2) Total assessed value of non-contract rural land (no figures available for ag preserve)

3) Includes value of tenant farmers holdings; not separable by contract status.









Critics of the rezoning have claimed that A-60 zoning prevents any reasonable use of the land, supporting their contention by pointing to the fact that available natural resources limit the ability of ranchers to respond to market conditions. Much of Marin's land is steeply sloped and has relatively low grazing potential. Limitations on groundwater supply and low quality soils in some areas restrict the landowner's ability to solve waste disposal problems.

However, supporters of the rezoning have maintained that agriculture can provide a reasonable land use. They have pointed out that the viability of agriculture in Marin is determined by technological, social, and environmental factors -- it cannot be seen in a strict business sense apart from its cultural influences. Ranching in Marin is anomalous in regard to much of the rest of California because of its lack of corporate-type farms and predominance of family-type operations. Where the corporate-type farm's viability is determined mainly by agricultural profit and alternative uses of capital, viability, or long-term continuance, of ranches in Marin is dependent upon lifestyle preferences and county land use policy as well as ranch income.

County policy, and landowners' perceptions of county policy, are particularly important to the debate on A-60 zoning and the question of the continuing viability of agriculture in Marin. For one reason, the hypothesis that market values of land zoned A-60 will reflect limitations on use is correct only if buyers and sellers believe that the zoning will withstand legal tests and changes in the makeup or viewpoint of the County Board of Supervisors. Without this belief, there will be an upward pressure on prices that will impede a rancher or dairyman who intends to stay in agriculture and who





wishes to expand his holdings. Similarly, a rancher may sell to a new owner whose purchase price reflects disbelief in the permanency of A-60 zoning and who thus becomes understandably motivated to encourage a rezoning that will fulfill his initial disbelief and protect him from financial loss.

A second influence of county policy evolves from the adoption of the Marin Countywide Plan. This Plan acknowledges the countywide benefits of preserving large amounts of open space, particularly through continuation of agriculture in west Marin. In effect, the people of Marin acting through the county government have decided that they wish certain lands to be preserved as open space and have asked agriculturalists to help them fulfill this goal. If agriculture can remain viable in the county under A-60 zoning but without direct intervention in the markets that affect agriculture and agribusiness, then open space goals are met at the same time that an economic sector and life-style are preserved. If not, the public, in acknowledging agriculture's role in preserving open space, should be prepared to assist agriculture through the institution of programs to enhance its long run viability.

The Board of Supervisors, keenly concerned with the question of the viability of agriculture in Marin County and well aware of the influence that would be felt by its zoning policy, instructed its planning staff to evaluate the long run viability of agriculture. A three-person team was assembled in June of 1973 to perform this evaluation. At the same time, Baxter, McDonald & Smart, Inc. was beginning a major study of the public service cost and revenue impacts of the Marin Countywide Plan. This study would be affected by the question of the viability of agriculture. The firm was asked to supervise the work of the study team that the County Planning staff had assembled and to take responsibility for the team's conclusions.



## B. Concept of Viability

The precise meaning of the question, "Is agriculture viable in Marin?" must be clearly understood. As a start, the word "viable," whose definitions<sup>1)</sup> include "capable of living" as well as "having the ability to grow, expand, develop, etc.," connotes survival and continuity rather than maximization of economic return. All factors that may encourage survival and continuity must be considered, whether or not they pertain solely to "economics." As noted previously, the question of "viability" must, for purposes of the present study, be viewed in social as well as economic terms.

The least demanding definition of economic viability might be to maintain marginal revenues at least equal to marginal cost. Even this lower limit on economic return does not strictly eliminate the tax-motivated individual or the rurally oriented individual who is willing to support a loss in ranching with income or assets from other sources. Similarly, the test of "fair rate of return" which has guided (and which has caused so much debate within) regulated utilities and industries, fails as a guide. Here again there remains the intractable question of tradeoff between tangible return on investment plus labor and access to a life-style.

To restate the point, life-style preferences are significant because ranchers, like people in general, enjoy the benefits of living in rural Marin. Looked at as a location decision, ranchers may have chosen to settle in Marin because it provides benefits which ameliorate the economic disadvantages: the environment is aesthetically more pleasing to them than at other locations, they can carry on family traditions, and they enjoy the community of family operated ranches.

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<sup>1)</sup> The Random House Dictionary of the English Language, 1966 edition.





These lifestyle preferences will remain significant in their decisions as long as ranch income plus other income or assets provide a standard of living that is acceptable to the individual capable of making the choice.

It can be conceded at the outset that the profit maximizer, the rate of return maximizer, and even the maximizer of individual planning horizon net worth will not invest, at current asking prices, in west Marin land unless this investor believes that county policy is transitory. The question of viability involves the individual who is now in agriculture and the individual who guides his investment decision by a range of criteria -- not all of them economic. The question of "viability" thus becomes the question of whether, over the next 20 to 30 years, there will be enough individuals who can and will accept the returns -- both economic and social -- available from preserving west Marin lands in agriculture.

Since preservation of agriculture is a county policy, a subsidiary question is "What county programs and actions can help maintain agriculture in west Marin and what are the countywide effects of such policies."

The remainder of this report addresses these questions. The problems that beset agriculture in Marin County are first described, and then solutions, recommendations and conclusions are presented.

### C. Study Procedure

The study procedure that led to these conclusions was, in form, a conventional "feasibility study." A thorough search of the literature was made and significant references are included in the Bibliography of this report. A total of more than seventy-five interviews or written inquiries and responses were held with academic experts on agriculture and agricultural economics, agribusiness concerns, real estate companies, financial institutions, labor groups, agricultural advisors, environmental quality experts, and conservation groups. Fifteen



interviews plus the fifty inquiries incorporated in the formal questionnaire survey described in the Appendix were used to query the current ranch and dairy operators in Marin and Sonoma counties. Financial analyses were made, using both published cost and revenue figures and figures provided on a confidential basis by operators in Marin.

Finally, the research was assimilated and conclusions were drawn based on the data and on the judgment of the study team as well as the judgment of experience of Baxter, McDonald & Smart, Inc. The final judgments contained in this report evolved after an evaluation of practicality, risk, and uncertainty as would judgments that considered only economic criteria. These judgments and conclusions concern a future set of decisions by current landowners and other individuals who will be acting out of motivations that include social as well as economic returns. Nonetheless, they were tested by the same standards that would apply to a purely economic evaluation of an investment or operating decision.





### III. PROBLEMS

This section of the report considers problems that may affect the viability of agriculture in Western Marin. Each of the factors involved in the agricultural process is examined in turn. Two factors, the price of land and farm management, were judged to be of critical importance to the viability of agriculture in Marin and a subsection is devoted to problems in each of these areas. The other factors of production are considered in another subsection.

#### Competing Agricultural Areas

A comparison of the production factors as they obtain in Marin County with the major agricultural areas with which Marin agriculture competes is central to the examination of problems that ranchers confront in Marin. Profiles of the competition offer the simplest yardstick by which to assess the problems of Marin agriculture. Marketing, transport, and regulatory factors define the areas competing with Marin County, but also differentiate the prices paid to Marin County producers from those paid to operators in leading production areas.

Grade A milk production in California is regulated by the California Milk Stabilization Board, which pools the demands of milk processors and the costs of milk production for the state as a whole. Production is allotted by contract and prices reflect costs of production characteristic of the entire state. Regional price differentials are built into the system, but they are intended only to influence the flow of processed milk to areas where consumption exceeds production. They do not reflect regional cost or demand differences.

California milk production is concentrated in two major areas. The San Bernardino-Riverside area provides for the Los Angeles "milkshed;" the San Joaquin Valley serves the Bay Area and smaller valley markets. Despite



statewide price pooling, cost comparisons with San Joaquin Valley producers provide a fairly accurate measure of Marin's competitive position in the Bay Area milkshed, as valley production costs strongly influence prices set by the stabilization board.

Marin calves and lambs are marketed chiefly at auctions in Petaluma and Dixon. Direct price competition is restricted to producers in the northern part of the state. Cheap transport for livestock on the hoof expands this market area somewhat and the low cost of shipping carcasses forces Marin producers, ultimately, to compete in a national market. A definition of the competition in the livestock business is thus difficult to establish.

For the purposes of this report, sheep production costs were compared with those of the Sacramento Valley, where 30% of the state's sheep and lambs were grazed in 1973 and with the San Joaquin Valley, responsible for 38%. (Marin's share was slightly over 1%.) Beef production costs were compared both with the Sacramento Valley (10% of the state's 1973 production) and the San Joaquin Valley (38%), depending on the information available. Marin's share of the cow calf business was 1.2% in the same year. National market considerations were noted where appropriate.

#### A. Land Prices

The price of land affects the viability of agriculture in several ways. On the one hand, it is a cost of production that a prospective farmer must consider before purchasing a farm in Marin. Even if the farm is already owned, the price that could be received if it were sold constitutes an opportunity cost to the owner. Land prices also affect agricultural operations through the property tax. Even more important in Marin than these effects, however, is the role of speculation. The evidence gathered in this study suggests that the majority of Marin farmers value their agricultural operation in Marin more than they





seek future capital gains from the sale of their land. Yet few are certain that they will never choose to sell for a high price and as long as the possibility of sale lurks in the back of their minds, the farmers cut short the long term commitments to agriculture -- commitments in the form of capital facilities, larger more optimal size operations, changeover to progressive farming methods, etc.

#### 1. Land Cost as a Production Cost

Land costs distinguish Marin County somewhat from regions of recent agricultural investment and expansion. A per acre price of land in and of itself does not necessarily present an accurate comparison of investment costs, as range quality and potential for improvement vary. Moreover, operations vary in their use of land. Southern California dairies, for example, are largely feedlots, importing hay and replacement heifers from low cost production areas. San Joaquin dairies raise their own feed and replacement heifers. Marin County dairies generally import feed but raise their own replacements. With these factors in mind, one can make an assessment of the deterrent land prices in Marin would pose to the agricultural investor.

According to the Merced County farm advisor, dairy investors in that San Joaquin Valley county are paying \$500 to \$700 per acre for pasture land unsuited for crop agriculture. This would appear to compare unfavorably with the \$350-\$500 that land zoned A-20 and A-40 near Lake Nicasio has brought in recent sales. This land is more hilly than average for land in the agricultural area of Marin and many ranchers expect prices that would average closer to \$1,000 per acre. More importantly, the availability of water for irrigation in the San Joaquin Valley permits pasture irrigation even on land unsuitable for crop agriculture, increasing its value for dairying. Valley land is also usually less rolling than Marin terrain and thus more usable and highway access is typically better.



Land producing feed (with irrigation) sells for \$600 to \$1,000 an acre in Fresno and Merced counties. The Fresno County farm advisor suggests that prospective dairymen buy unimproved alkali land and make the expenditures required to prepare it for feed production, a procedure which results in significantly lower land costs. Valley dairies are feeding their milking herds cut roughage and concentrates and pasturing only their replacements on irrigated pasture. With an average acreage per farm of 200 acres in Merced County, and 175 in Fresno County, dairy animal unit<sup>1)</sup> densities run one animal unit per acre and 1.8 animal units per acre, respectively, in those counties. Marin County, in contrast, pastures much more extensively. With an average dairy size of 1,257 acres, Marin dairies average a much lower density of .222 animal units per acre. Given the present low intensity of range use, thus, even at equal per acre prices, an investment in dairying in Marin would run  $4\frac{1}{2}$  and 8 times the costs in land of dairies in Merced and Fresno counties.

Beef cattle and sheep are customarily grazed on much less valuable land. The cost of range land for beef in Tulare County is estimated at \$125 per acre and at \$100 per acre in Fresno County. Relatively little irrigated pasture is used in San Joaquin Valley cow-calf operations. Much less reseeding and fertilization are practiced on San Joaquin Valley rangelands, in fact, than are practiced in Marin. Reflecting this difference in management, as well as differences in climate, beef cow densities on Valley ranges average one animal unit per 15 acres, while Marin beef operations average one animal unit per four acres. At these rates, ranchers in Marin can afford to pay more for beef grazing land than central valley farmers, though the cost of seeding

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<sup>1)</sup> One animal unit refers to one cow and her calf, one ewe and her lamb(s), etc. Because offspring are sold before one year's tenure on an operation, the term "animal unit" is used to describe the annual tenancy of one mother and the shorter term tenancy of her offspring.



and fertilizing and other costs which may be higher in Marin must be considered.

Sheep land prices, though generally lower than dairy land prices, are difficult to compare with similar costs in Marin because of anomolous grazing circumstances in both major production areas. Sacramento Valley sheep raisers commonly rotate sheep with an annual barley crop. Land suited for such rotation sells for \$150 an acre; the greater profit in barley farming suggests the sheep grazing to be in the area of \$50 to \$100 per acre. In the San Joaquin Valley, the sheep industry is dominated by Basques who own no land but rent stubble at  $2\frac{1}{2}\text{¢}$  to 3¢ per head day.

Existing Marin ranchers do not face the high asking prices current in the county, though without Williamson Act protection property taxes are assessed at comparable market values. Few Marin ranchers bought into the county at such rates. Seventy percent of the respondents to the agricultural viability survey<sup>1)</sup> purchased their main ranches before 1953. Expansion by purchase of adjacent property is, however, impeded by such rates.

Rents for agricultural land appear to be unusually high in Marin County. In assessing taxes for land in Williamson contracts, the county assessor uses an average range rent of \$10 per acre for land that is 100% usable.<sup>2)</sup> The farm advisor gives a range of \$3-\$15. Rents for range in San Benito County,

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<sup>1)</sup>The agricultural viability survey was conducted for this report in July, 1973. The survey involved personal interviews with 48 West Marin ranchers, selected through scientific sampling techniques to reflect proportionate a) numbers of ranchers in each of the major ranching categories, b) numbers of ranches with and without Williamson contracts, and c) numbers smaller and larger than the mean acreage of each of the three major ranching categories.

<sup>2)</sup>The assessor's figures are based on interviews with ranchers conducted by county ranch appraisers.





however, average \$3.50 per acre, in Tehama County \$.75-\$4.50 an acre, and in Tulare County \$3-\$4 an acre. (Lesser carrying capacities account for much of this.) Leasing of summer pasture on Federal lands further reduces the land costs of operators in the Sierra foothills region. Where rented range is a common source of feed, as it is particularly in the beef and sheep business, this cost difference is particularly significant.

## 2. Property Taxes

Real estate taxes are often cited as a major problem contributing to the decline of agriculture in Marin. These taxes often range as high as \$25 per acre, while the annual income producing value of these lands is actually closer to the assessor's estimate of \$10 per acre. If this inequity continues, agriculture is viable in the long run only by participation in the Williamson Act.

Taxes under the provision of the Williamson Act are reduced to approximately \$3 per acre for Marin County, a figure that compares very favorably with the agricultural value of these lands. With taxes reduced to this level, participants generally do not cite taxes as a major problem. However, non-participants in the program still must pay the higher taxes. Non-participants elect to remain outside of the protection offered by the Williamson Act for a variety of reasons. Basically, these reasons can all be attributed to a lack of long term commitment to agriculture.

With land values at a high level due to speculation on non-agricultural uses, many ranchers have become more interested in the price their land will bring than in the return from their operations. This position is quite understandable seen in the light of the marginal returns characteristic of such operations. Circumstances of this nature have resulted in a situation that has become known as "tax-farming," or trading operation returns for the tax bill, while waiting for someone to offer the right price for the ranch.



Not all ranches not participating in the Williamson Act are tax farmers, at least not intentionally. Some do not hold clear title by themselves and, though they intend to continue ranching until retirement, they cannot convince those persons with whom they share the title to take this action. According to the agricultural viability survey, approximately 66% of the ranchers share the title to their lands with others, in most cases brothers, sisters, or other relatives.

Taxes in the San Joaquin and Sacramento Valleys are only to a small degree raised through speculation affecting land prices. Thus Marin farmers suffer more from having to pay taxes on speculative value. A brief survey was made of the tax rates in rural areas of the Sacramento and San Joaquin valleys. The tax rates varied, but appeared to be comparable on the average to the rate in Western Marin.

### 3. Speculation

The best source of data on land prices in Marin is the county assessor. Questions regarding land prices in agricultural areas and land ownership will be put to him along with the requests for other information relevant to analysis of the countywide plan. The discussion here and in the subsection on solutions to land price problems is based primarily on opinions offered by knowledgeable people as to market values. The subsections will be reviewed later when better information from the assessor is available.

It has already been indicated that the value of Western Marin land for agricultural purposes is likely to be in the order of \$50 to \$150 per acre. The variation is due to factors such as location, soil characteristics, and especially the hilliness of the terrain.

Present zoning for most of Western Marin is A-60, which allows the development of one residential unit for each 60 acres of land. A knowledgeable





realtor has suggested that \$30,000 is the average value of a homesite describable as an estate, ranchette, etc. Allowing \$12,000 for development expenses (roads, water, power, sewage, etc.), he estimates land value as \$18,000 or \$300 per acre. Obviously this value varies significantly due to accessibility, view, development expenses, etc.

Thus the market value of land with only one homesite allowed is likely to be a multiple of its agricultural value. Given this relationship, some farmers may be expected to show more concern about the maximization of their development potential than the maximization of their agricultural income.

The problem of market land values far in excess of their agricultural value is exacerbated if the price reflects the hope of development rights in excess of one unit per 60 acres. Prior to the A-60 zoning, this expectation prevailed. There remains an expectation -- a combination of scepticism and wishful thinking -- that greater densities will be allowed, if not in the immediate future, then later with a different board of supervisors (the "environmental concern is a fad" theory) or 20 years in the future when urban pressures are greater. Estimates of market value, reflecting these expectations, were in the order of two or three times the \$300 suggested as the average land value attributable to a single development right per 60 acres.

The threat to agriculture of talk of land value 10 times the agricultural value is not only due to the farmer's temptation to sell to a developer. More important is the tentative posture with regard to his agricultural management that he is likely to exhibit. With a little uncertainty about how long he will be farming, he hesitates to make major changes upgrading his stock or crops which would require several years to pay off. He puts off building a barn or buying new machinery. Steps like these threaten the agricultural viability of his farm.



## B. Factors of Production

### 1. Climate, Land and Water

West Marin's predominant combination of land and water supply generally do not provide an environment as conducive to beef, sheep, and dairy operations as that of the Sacramento and San Joaquin Valleys. The effect of these factors on livestock directly, though significant, is not as important as their influence upon potential maximization of pasture yield. Owing to more reliable rainfall, Marin dry range is more productive than that of the San Joaquin Valley. However, Valley climatic, water, and land resources increase potentials for such land uses as hay production and irrigated pasture. High and rising feed prices increase the competitive advantage of areas that can grow their own feed. The trucking costs involved in shipping feeds from production areas (e.g. the San Joaquin Valley) to Marin ranches strengthens the competitive advantage of valley operators.

Most processing plants are relatively close to their dairies, and the costs of shipping milk from processors to markets is relatively small. Thus, Marin's proximity to its major ultimate market only partially compensates for its remoteness from feed production areas.

Central Valley ranchers enjoy a significant edge over their Marin counterparts in their ability to produce feeds cheaply. Though the potential uses of Marin rangelands have not been fully explored under present economic conditions, some efforts to improve land productivity have been undertaken. Range improvement varies from the reseeding and fertilization of dry pasture to pasture irrigation and the processing of green chop, silage, and hay. Roughly 20% of west Marin ranchers practice reseeding on a more or less regular basis, according to the agricultural viability survey. Forty-two percent fertilize regularly. However, the county has



only five hundred acres of irrigated pasture and hay production is limited to small areas in interior valleys. A lack of water for irrigation, and cool, foggy summer weather are prime environmental deterrents to the intensification of pasture use. Soil quality and topography are also obstacles. Marin's prime soils are limited largely to narrow valleys along major streams. Only 3% of the land in west Marin has a slope of under 5%. The Central Valley, with hot, sunny summers, flat ground, and water provided by Sierra runoff, in contrast, is ideally suited to highly productive range use.

The impact of this environmental inequity falls most heavily upon Marin's dairy industry. The trend in dairying is increasingly away from pasturing toward dry-lot feeding of roughage and concentrates. In 1972, North Bay Area dairies as a whole used pasture to provide only 12% of the nutritional requirements of their herds; roughage -- hay, silage, etc. -- accounted for 55%, concentrates 33%. In the north Joaquin Valley, pasture provided only 3% of the nutritional requirements of dairy cows. In the south San Joaquin Valley, the figure was less than 1%.

The state's beef and sheep industries, in contrast, continue to rely primarily upon pasture feeding. As Marin's dry range is generally more productive than that of the San Joaquin Valley, the county's climate relatively favors beef and sheep operations. Major operations, however, supplement with feeds when pasture production is down. According to Glenn Sperlock, U.C. Davis sheep specialist, a typical Sacramento Valley sheep operation supplements with hay one month out of the year, averaging 80 to 100 pounds of hay per animal. Feed supplementation on cow-calf operations varies widely depending upon range carrying capacities.

The direct impact of Marin's climatic regime on livestock is mixed. According to U.S. Berkeley dairy specialist Richard Courtney, Marin's





mild summers tend to raise levels of milk production on a per cow basis, and to lessen disease problems. The mild climate is also a boon to fertility in ewes. The cool, wet winters characteristic of the county, however, tend to raise mortality rates for lambs and calves above those of the central valley.

## 2. Pollution Problems

Marin dairies face a severe liquid waste disposal problem. Climatological and topographic factors and a lack of cheap land for sump disposal methods put Marin at a serious disadvantage relative to valley dairies. Their small size also works to their disadvantage.

Most dairies in the county have less than 200 cows, confined (during the winter) to a fairly small area. "In a feedlot each animal will produce more than one-half ton of manure (per year) which will be deposited on less than 200 sq. feet of area. . . .Rainfall runoff from feedlots can have a biochemical oxygen demand (BOD)<sup>1)</sup> from ten to 100 times that of untreated municipal sewage. Such waste waters entering streams and lakes cause oxygen demand depletion in the waters and results in fish kills and long term undesirable ecological effects."<sup>2)</sup>

Because of the "long term undesirable ecological effects," the waste waters cause in Tomales Bay and elsewhere, the Regional Water Quality Control Board has issued tentative "Minimum Guidelines for Protection of Water Quality From Animal Wastes." It requires that "Animal confinement facilities plus adjacent crop lands under the control of the operator shall have the capacity to retain surface drainage from manure storage areas, plus any washwater, during a 10-year 24 hour storm, i.e., a storm of 24 hours

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1) The oxygen required by aerobic organisms, as those in sewage, for metabolism.

2) "Animal Feedlot Waste Research Program," paper presented April '71 by Jack L. Witherow, R. S. Kerr Research Center, EPA, Ada, Oklahoma.



duration which yields a total precipitation of a magnitude that has a probability of recurring only once every ten years."<sup>1)</sup> These guidelines sound reasonable. But for Marin, as will be seen, they mean that each of the 70 dairies in the county will have to have a specially designed treatment system.

Unlike most San Joaquin dairies, Marin dairymen are faced with relatively high winter rainfall rates, and a lack of cheap land on which to divert liquid wastes for percolation. Moreover, particularly in central Marin, steep topography precludes or impedes sprinkler recycling systems.

Two persons with extensive knowledge in the area of agricultural waste problems were asked how they thought the problem could be solved for Marin dairies. Both persons said essentially the same thing: that each dairy would have to be treated separately; and therefore it would not be possible to set up any single model which could be used as a guide.

William C. Fairbank, Extension Engineer for the University of California at Riverside, has been involved with animal waste matters statewide and has also had considerable experience with the Marin County dairy situation. When consulted as to what might be done to deal with the problem in Marin, he wrote, "There is no single answer to the liquid dairy waste problem in Marin County. Waste retention structures are relatively simple and not unreasonably costly; but where would you empty the bucket? Most dairies in the North Bay region lack access to adequate recycling. Liquid waste dewatering-decomposition dehydrating equipment is available, but is not economically justifiable. Dairy sewage digestion systems are possible but even more costly. The relatively low cost of milk production in the Central Valley keeps economics constraints on all producers."<sup>2)</sup>

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<sup>1)</sup> California Regional Water Quality Control Board "Minimum Guidelines."  
(See Appendix)

<sup>2)</sup> Letter from W. C. Fairbank, August 21, 1973. (See Appendix)





William DuBois, Director of Natural Resources and Legislative Assistant for the California Farm Bureau Federation, Sacramento, was asked if his organization had conducted any studies to determine any economical methods of dairy waste disposal which might be modified and used in Marin. His reply was, "We do not know of any methods which might be represented as being most economical for dairy waste disposal or treatment in order to satisfy Regional Water Quality Control Requirements. Every dairy has a situation apart from the next one, due to topographical and climactical conditions, and also due to the construction method of the institution itself. In addition to that, the various regional boards have differing requirements. In many cases the most economical method of non-violation is relocation."<sup>1)</sup>

The cost of specialized systems will have to be confronted by each dairy. Furthermore, the relatively small size of Marin dairies works to their competitive disadvantage, because they are less able to take advantage of the economics of scale characteristic of pollution control systems. The most severe problem will be that of financing the systems once the needs of each dairy are determined. In the past there were several methods of technical and financial assistance. The Rural Environmental Assistance Program (REAP) had a cost-sharing program providing funds for waste management systems. The Farmers Home Administration had a program that provided funds for the disposal of wastes (including solid wastes). But only public bodies or nonprofit organizations that have authority to tax and issue bonds, etc. could qualify for the grants and loans. This same program also provided assistance to small municipalities for construction of sewerage systems.

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<sup>1)</sup> Letter from William DuBois. (See Appendix)



### 3. Labor

The lack of skilled, reliable agricultural labor at present wage rates is a problem Marin ranchers share with the state as a whole. In terms of labor, Marin ranchers are at a competitive disadvantage only to the extent that other adverse factors prevent their matching the bids of valley ranchers for quality labor or that size or poor management prevent the optimum use of labor inputs.

Forty-three per cent of the respondents to the agricultural viability survey complained of a lack of skilled, reliable agricultural labor in the county. Dairies, as the most labor-intensive of the major agricultural enterprises in Marin, complained most frequently. The requirements and working conditions of dairies account for their labor problems. Because dairy cows must be milked twice a day, seven days a week, without fail, labor reliability is crucial to management. Such a schedule, however, requires a split shift for milkers and interferes with days off. The unattractiveness of the split shift is indicated by the relatively low turnover rate of "outside men" -- dairy employees whose schedules are not tied to milking -- compared to the rate for milkers. Days off, for Marin milkers, average only four a month. Dairies with large herds -- 600 to 700 cows as opposed to the 120 to 360 cows range of Marin dairies -- are able to milk continuously, starting their afternoon shift as the last cow of the morning shift leaves the barn. Thus, the state's major dairies are able to offer workers a choice between two successive complete working shifts as an enticement. Some major dairies in Sonoma County have reportedly met their labor needs simply by attracting highly skilled long-term workers with tenders of high wages.

Unionization of dairy employees is reportedly more widespread in the San Joaquin Valley than it is in Marin County. Due to the resistance of operators in west Marin, the major dairy union, the Dairy and Creamery Employees Union, has traditionally confined its representation to east side



dairies. Their gradual demise has left Marin with only a single union dairy. According to union representative Leon Dunn, however, between the Dairy and Creamery Employees Union and the Christian Labor Association, a relatively high percentage of San Joaquin Valley dairy workers are organized. In Marin County, union wages are comparable to nonunion rates. Organized workers, however, are guaranteed six days off per month, and are covered by a health plan costing their employers \$744 per year. Such added costs may operate to the disadvantage of San Joaquin union dairies. Increased reliability, however, may compensate.

#### 4. Marketing

a. Dairying. Broadly speaking, Marin dairy, beef, and sheep operations suffer no marketing disadvantages relative to their northern California competitors, nor do they face the prospect of disappearing marketing centers. Vertical integration in the state's beef industry provides the only foreseeable threat to Marin's marketing position.

As mentioned previously, milk production in California is controlled by a state agency -- the California Milk Stabilization Board. As such, the "marketing" picture for Grade A milk consists of several elements: 1) increases in consumer demand and consequent increases in the availability of quota production allotments intended to meet that increase; 2) regional price differentials determined by the state regulation agency; 3) the long-term availability of local processors; 4) differential transportation costs between producers and processors; and 4) the prospects of vertical integration.

Per capita consumption of drinking milk has been steadily falling, but at a declining rate, over the last decade. At the same time the percentage of California milk used for dairy products other than drinking milk has steadily declined. These two downward trends have been counterbalanced by state increases in population. U.C. David agricultural economists predict that





with a population of 26.5 million in 1980, California milk production will increase 31% over 1961-65 levels. As a response to this increased consumer demand, increases in production quota allotments are distributed to existing grade A dairies. Priority is given to producers whose quota allotment, at the time the system was instituted, fell farthest short of their existing production level. Taken as a whole, Marin quota allotments are 95% of prior production levels in butterfat, and 88% over production in solids not fat. Figures for the state as a whole are 80.6% and 84%, respectively. Thus, there is little likelihood of the Milk Stabilization Board granting new allotments to Marin producers.

Quota allotments, once distributed by the state, are saleable. Dairies interested in expansion, when additional quota is not available from the state, must purchase it from dairies reducing production. Current prices are high -- roughly \$800 per pound.<sup>1)</sup> An average Marin dairy attempting to expand to San Joaquin Valley standards would be faced with acquiring \$90,000 worth of quota. The prospects for a drop in the price of quota are poor. The price of quota reflects the profitability of milk production and is bid up by producers in high volume-low cost production areas.

In the past four years, nevertheless, there has been a small but net migration of quota into the county. From August, 1969 to July 1973, Marin producers' transactions with other dairies resulted in a net increase in quota of 1.5% butterfat, and 0.75% solids not fat.

The long-term availability of processors for Marin milk is assured. An extensive survey of all Marin milk processors indicates that all appear inclined toward the expansion of present facilities, and that none feels threatened by the decline in the number of dairies in the Bay Area. All were aware that significant numbers of dairies would be affected by

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<sup>1)</sup> The price varies within \$200/lb. either way, depending on ratio of solids to butterfat.



pollution requirements, and rising feed costs, but none felt that their supplies would be curtailed. Foremost, operator of the largest processing plant in San Francisco, depends chiefly on Marin producers for its milk supply and plans to expand its Bay Area processing facilities. The growth of cooperatives has compensated for the departure of Carnation, Borden, and Knudsen from the area. In fact, it is due to the domination of marketing by cooperatives that the market for Marin milk is secure.

The importance of cooperatives also influences producer-processor trucking costs and the extent of vertical integration, the last two elements of the marketing picture. Processors are permitted to deduct the costs of trucking raw milk to their plants from the regulated price paid to producers.

Most of the producers in the North Bay area have formed producers' cooperatives to take advantage of the lower hauling rates available when the commercial trucker is eliminated. These cooperatives own their tankers, hire drivers and administrators, and contract collectively with a processor for the sale of their milk. Often, this collective operation extends to the processing and marketing of the milk itself, with the producers actually "owning" the entire operation.

There are four cooperatives operating in Marin at this time, two of which are part of major processing operations. Most notable of these are the Petaluma Cooperative Creamery and the North Bay Dairymen's Cooperative. The Petaluma Coop is located in Petaluma, the closest of all processors to Marin dairymen. Operations include milk pickup, processing into bottled milk, butter and powder, and marketing of these products under the Clover label in the North Bay Area. This Coop also has operations in the Central Valley, and is building a cheese plant in Tracy.

The North Bay Dairymen's Coop has its office in Petaluma but its milk is processed in Berkeley. The operation is much the same as the Petaluma





Coop's, with milk being picked up, processed, and marketed under the Challenge label. Both these coops also sell bulk raw milk to other processors in San Francisco and the East Bay, such as Spreckels and other smaller operations.

The Western Dairyman's Cooperative is a group of 20 producers -- half in Marin -- who deliver their milk to Arden, Inc. in San Francisco. The Point Reyes Cooperative Milk Producers, the fourth major coop, markets under the Challenge label.

It is reported that this producer-initiated vertical integration has forced several nonintegrated processors to transfer their operations to the Central Valley. With producers shifting to cooperatives offering lower trucking rates, Carnation and Borden, for example, both terminated operations in Marin County.

b. Beef and Sheep. Like dairying, the marketing picture for cow-calf and sheep operations is made up of several factors. Consumer demand, as reflected in Marin's marketing area, is a primary consideration.

Projections for beef consumption are for increases for both the nation and the state as a whole. California beef consumption is presently 30% above the national average, and levels are expected to rise 16% above 1965 levels by 1980.<sup>1)</sup> California is a net importer of beef. Historically, state feedlots have been able to compensate for the lower feed costs available to their midwestern competitors through superior management and greater volume. The advantage is not likely to persist. The percentage of imported beef to California is expected to increase from a 1965 level of 50% to 63% in 1980. As a result, total California feedlot production will have risen only 8% during that 15 year period.<sup>2)</sup>

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1)"Projections of California Agriculture to 1980 and 2000," Dean, et al., Giannini Foundation, University of California, Davis, 1970.

2)These projections were published in 1970. Recent changes in the marketing picture for beef may further drop that figure.



Sheep numbers in California dropped 16% between 1955 and 1965, due to competition for land with beef and crop agriculture. Numbers are expected to drop an additional 4% by 1980, and then level out. Though California exports some lamb to eastern markets in the spring, the state is a net importer of lamb.

Despite these trends toward increasing packing and processing out of state, market centers for Marin livestock appear secure. Marin livestock is marketed primarily in Petaluma and Dixon. Interviews with Stoneburner Livestock Auction Market and the Petaluma Livestock Commission in Petaluma, the Armour Meat Company in Dixon and Lewis & McDermott meat packers in Oakland indicate that there is no threat of marketing facilities or packers moving out of Marin's market area.

Neither are Marin producers at a disadvantage as regards transport costs.

c. Summary. When compared to principal production areas, the inherent disadvantages of agriculture in Marin are significant but not overwhelming. West Marin does not have the feed growing potential of the San Joaquin Valley, owing to its topography, soil quality, climate and lack of irrigation water. However, Marin dry range is more productive than that of the Valley. Marin pollution control costs are higher than those of the Valley, again owing to climatic and topographic factors, as well as the high costs of land for sump disposal and the necessity of designing unique treatment systems. Labor and marketing constitute no apparent disadvantages. Adequate management is an additional factor of production that is particularly critical to the success of ranching operations. Here again Marin suffers by comparison with Valley ranchers. The following section is devoted to this problem.



## C. Management

### 1. Size/Techniques

A comparison of operation size gives some indication of the economic efficiency of Marin ranches relative to major production areas. According to the agricultural viability survey, the average milking herd in Marin consists of roughly 209 cows. The typical San Joaquin Valley dairy herd numbers 200-320. The average herd of a Marin cow-calf operation consists of 274 animal units. Sacramento Valley cow-calf herds typically number 360 animal units. Marin sheep flocks average 569 ewes. Sacramento Valley flocks commonly number nearly twice that. Livestock numbers for competitive areas represent medians, not averages. Thus, they give an indication of the size of operation most common in leading production areas. The economies of scale inherent in industries where management input per unit is relatively low obviously give larger operations a competitive advantage.

A comparison of the management practices of producers in major production areas confirms this picture. In dairying, culling<sup>1)</sup> rates offer a fair indication of operation efficiency, as high culling rates indicate a rapid turnover of cows and the maintenance of a string of exclusively high producing animals. San Joaquin Valley culling rates are typically 25-28%. The average rate for Marin dairies is 18%.

A comparison of the productivity levels is also relevant to a determination of the relative efficiency of Marin dairies. Dairies over the state as a whole are averaging annual production rates of roughly 14,500 pounds of milk per cow, where for North Bay producers this figure is on the order of 13,300 pounds. However, some dairymen in Marin and Sonoma who utilize intensive

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<sup>1)</sup> Culling refers to the removal of low quality or failing animals from a herd. Dairy cows whose production is dropping, beef cows that fail to conceive or bear undersize calves, and ewes that are infertile or fail to bear heavy lambs or multiple lambs are commonly culled. Culled animals are commonly sold, but receive low prices.





management techniques are averaging above 17,000 pounds per cow and in feedlot situations of the Valley averages of 19,000 pounds are not uncommon.

Milking rates are another significant indicator, particularly since increased milking rates suggest major capital investments in labor-saving milking devices. A typical San Joaquin dairy milks 40-70 cows per manhour. The average for Marin is 33.4. Fifty-seven per cent of respondents to the agricultural viability survey indicated that they had plans for future capital investment. Many of them intended to construct more efficient types of milking barns.

Comparative management data are less available for beef and sheep operations. A comparison of cull rates for both industries indicates that Marin management practices are comparable to those of major production areas. Crossbred sheep producers in Marin had an average cull rate of 12% of breeding ewe population. Typical cull rates for Glenn, Colusa, and Tehama counties average 13.5%. Beef culling rates in Marin averaged 10%, 2% above U.C. Davis estimates for typical Sacramento Valley operation. Breeding for multiple births in sheep and for efficient weight gain in calves is an important management practice for major producers. The extent of either practice in Marin is unknown. Statistics comparing feeding practices are also unavailable.

## 2. Availability of Advice

California agriculture as a whole is becoming more management oriented. The small family farm is increasingly giving way to large-scale operations maximizing new technologies and scientific discoveries. The dairy, beef, and sheep businesses have not escaped this trend. The adoption of new technologies and the willingness to use management advice are largely functions of an individual rancher's social characteristics and his evaluation of the prospects for his operation. These factors are dealt with elsewhere in



this report. The availability of management is a third important factor and is most relevant here. Management advice is available from two major sources in all California counties, except San Francisco County. The University of California Agricultural Extension Service, with research facilities headquartered in Davis and farm advisors at the county level, provides farmers with a wide range of advisory services. Most counties are served by several specialists in each of the major crops grown within county boundaries. Tulare County, for example, employs two such advisors, one specializing in dairy production and the other in beef production.

In contrast, Marin employs only a single advisor who is responsible not only to west Marin ranchers, but to the much larger population of garden enthusiasts on the east side. The Marin advisor estimates that he devotes seven hours a week to backyard calls, six hours a week to 4-H, and the remainder of his time to ranchers, administration, liaison with other agencies and miscellaneous calls. He has remarked that he is lucky if he devotes two days a week to field work. Farm advisors' salaries are paid by the University of California, though office space is provided by the county. The Soil Conservation Service, a unit of the U.S. Department of Agriculture, is a more specialized source of assistance. The Agricultural Stabilization and Conservation Service (ASCS) without charge to the rancher is prepared to make a detailed assessment of the range improvement activities -- stock ponds, reseeding, fertilization, draining, etc. -- a rancher could profitably undertake. Under the REAP program, financial assistance for such projects was also available from ASCS. After being discontinued in 1971, this program was supposed to be revived; and funds were included in the 1973 ASCS budget. Unfortunately, these funds were impounded by President Nixon.



### 3. Social Considerations

This report began with the assumption that the preservation of agriculture within the county was in the public interest and that ways should be found to strengthen and protect the position of agriculturalists in Marin. This section attempts to deal with the social attributes of the ranching population which are relevant to such a policy and, in general, to place the role of the ranchers in perspective with regard to development pressures in the rural areas.

#### a. Age

The most important of these social attributes relate to the age and orientation of the operators. Almost all of the ranching operations in the county follow traditional patterns; most have been handed down from father to son and are family-run. These family-run operations are basically seeing the same squeeze which has plagued the small farmer everywhere; that is, they are faced with the dilemma of undertaking large capital expenditures to stay competitive or eventually going out of business. Their willingness to undertake such heavy capital expenditures is influenced by at least two factors: the operator's age and his outlook on the future of agriculture in the county.

According to the 1969 U.S. Census of Agriculture, the average age of ranchers in Marin County is 52.8 years, with almost 45% of the operators over 55 years of age and only 7% under the age of 35. It is extremely unlikely that these older ranchers would be willing to commit themselves to such large capital outlays and indebtedness unless they have children interested in carrying on the business after they retire and they felt there was a good chance that the business could run profitably long enough to repay the investment.





According to our survey of agricultural producers, 67% of the ranchers have children who have shown an interest in carrying on the business once they retire. However, due to federal estate and state inheritance tax programs, it is very difficult to pass on these businesses without complex estate planning. For example, a dairyman working a 600 acre ranch with a total of 400 cows might be worth \$550,000 but have little extra cash reserves on hand. Assuming he holds the property jointly with his wife and wills it to her, on his death half of the estate passes untaxed to his wife, along with a tax bill of \$66,000 for the other half. This kind of situation commonly results in the forced sale of part or all of the ranch holdings, leaving the family with little to work with. Before the young rancher can get control of the operation, however, title must pass from his mother to himself, again usually via the estate route. This time, however, the entire estate is taxable (except for a 10% per year federal tax credit if the wife dies within 10 years of her husband) and the tax bill will be in the neighborhood of \$200,000. At this point, there is no other realistic choice but to sell out. It must be kept in mind that this represents the most extreme example; forms of tax planning to be discussed later can reduce significantly the tax payment to a much more manageable figure.

Another problem in this area is the method of assessment used for estate purposes. Most ranchers interviewed felt there was a great inequity involved in assessing the value of the land for estate purposes at its speculative value when the land value for property tax purposes (under the Williamson Act) is set at its productive value. A change in this policy, though highly unlikely, could result in a more manageable tax burden on young ranchers desiring to keep the family operation running.



## b. Adoption of Changing Technology

The problems involved in attempting to induce technological change in west Marin agricultural operations are significant. One of the problems is a lack of commitment to long-term agriculture. Farmers approaching retirement with no ideas as to who could continue their farming operations are not likely to make the effort to adopt new technologies (and to incur the appreciable costs involved). Also, a thought in the back of a farmer's mind that he may decide to accept a lucrative offer for his land makes him less interested in long-term investments.

The traditional independence of these ranchers diminishes interest in a gospel of modernized farming. The life-style involves long hours of work for little return, but the pleasures of rural life are not usually measured in monetary terms. Living in rural Marin is one of the factors that makes a business returning very little profit a "viable" operation for many. Another is the opportunity to "be one's own boss," running the business oneself without having to listen to anyone else tell you what to do. This attitude of self-reliance is predominant among the older ranchers and may have led to their falling behind the times as far as change in technological matters goes. While farmers in other areas have learned to accept advice and financial assistance to stay competitive, ranchers here have remained resistant to outside help.

Today, many are realizing the necessity of change, but face a dilemma in trying to determine precisely what changes are necessary and whether they are worth the cost, considering the climate for agriculture today in Marin.

It is interesting to note how long present ranchers have been operating in Marin. The average tenure is 30.3 years, although some families have been there for generations. Only 10% have moved into the county within the last



10 years. The important point to be derived from this is that for most of these ranchers, today's higher land values represent an immense capital gain over what they paid for the land long ago. High land values and concomitant development pressures have encouraged ranchers to build expectations of possible high profits from the sale of ranch lands.

Management decisions made by ranchers have been influenced by these expectations. The possibility of an opportunity to sell out at a lucrative price may result in a rancher feeling less inclined to modernize his operation. Some ranchers interviewed stated that this uncertain climate would have to be resolved before they would undertake any further investments.

Because of this situation, it is difficult to predict accurately the extent of those certain to continue ranching. Surveys have attempted to gather responses to this question, but the validity of those responses are questionable. A rancher may plan to continue ranching indefinitely but when confronted with a large amount of money, he may change his mind quickly. Still, the surveys provide the best indicators possible.

A recent survey taken by the Marin County Farm Bureau found that 77.6% of its respondents were planning to continue in agriculture for at least 10 years, and 16% for less than 10 years. This survey was included only members of the Marin County Farm Bureau Association and attained a 50% response.

The previously mentioned survey conducted as part of this study obtained similar results. Twelve percent of this sample indicated they would go out of business in the near future. The majority of this 12% were older operators with no one to continue the business and those severely affected with pollution problems. Ninety-six percent indicated they would like to see their lands remain in agriculture.





These survey results indicate a general feeling among those presently engaged that agriculture can continue to provide them with a satisfactory life-style given the proper conditions .

Another indicator of continuance can be seen in the participation in Williamson Act agreements . Some 55% of the total acreage in the Agricultural Preserve Zone is under agreement, indicating a commitment for at least 10 years . In addition, many other operators would be willing to commit themselves in like manner for the tax break but, because they do not have clear title to their property, are unable to do so .

The above information suggests that the farmers of the county are more concerned about their agricultural operations than they are about becoming millionaires through the sale of their land . This attitude is certainly not characteristic of all farmers; some would prefer the money . Yet, the answers to questions and the Williamson Act commitments imply that county actions which lower land values are less relevant as a threat to financial equity than they are an aid to the preservation of a preferred life-style .



#### IV. SOLUTIONS

In zoning much of west Marin A-60, the Supervisors have committed themselves to preserving agriculture in the area. That goal must be supported by realistic county policies. To some extent, the technological and social problems confronting agriculture in Marin are a result of the widespread assumption that ranching would inevitably give way to highly lucrative urban land uses. A-60 zoning is a first step in reversing that climate. The real resource, land cost, and management problems described above call for more tangible solutions, however.

Necessity is thus a prime justification for county action in support of its agricultural preservation goals. Equity is another. West Marin is now an aesthetic benefit to residents of east Marin and the Bay Area as a whole. Though the county is clearly justified in removing some of this speculative value of west Marin lands for the good of the county as a whole, the prohibition of any income producing land use from the area is clearly inequitable. Agriculture is now a money-making enterprise for many west Marin ranchers. County action is required to keep it so.

The sequence of recommendations making up the bulk of this report roughly corresponds to the order in which problems were discussed in the preceding section. Speculation, taxes, and development are discussed at the outset. Methods of increasing the productivity of land and alternative pollution control systems are dealt with next. Recommendations for improving management and management services and a discussion of social matters correspond to the previous management section. Three additional sections complete this chapter. The first considers alternative open space land uses as supplements to agriculture in west Marin County. The second proposes a specific development control system for west Marin. The final section modifies that proposal for a special case: the Tomales Bay-Nicasio Valley corridor.



## A. Land Costs

With the market value of rural land in Marin running several times its agricultural value, the problem of agricultural preservation must be looked at as essentially one of competition between land uses. In a situation with little or no controls on the timing and location of development, agriculture would stand no chance of surviving in the areas desirable for development; in less desirable areas where development would not immediately outbid agricultural uses, major problems of compatibility from even limited development would arise to eventually remove any remaining viability.

The County has taken a very important step to preserving agriculture in the adoption of A-60 zoning. The problem, however, remains a difficult one due to a lack of confidence in the permanence of the zoning. This lack of confidence has the effect of maintaining speculative interest and concurrent high land values in the agricultural areas and, more importantly, influencing ranchers' decisions on the management of their investments. Hence, assurances of a viable climate for agriculture over the long run are necessary if ranchers are to meet the demands of change. If no assurances can be given, ranching as a business will continue to decline through inadequate capital improvement to an interim use status, and the pressure for its development will increase.

The most down-to-earth action that the Board of Supervisors can take to increase the credibility of A-60 zoning is to continue to turn back the requests for rezoning which will arise. Zoning in exurban areas has long been used as a means whereby legislators impose restrictive conditions on development until the time and the proposal seem propitious to allow it. If future zoning adjustments lead landowners and potential landowners to sense that the A-60 zoning is playing such a role, the speculative component of land values will not diminish.

The other area in which legislative policies can help to narrow the gap between speculative market prices and their value under A-60 zoning is the





adoption of policies which will facilitate the effective operation of farms. As farms evidence a greater productivity, the value of land for agricultural purposes will increase. Suggested policies are discussed throughout this section.

It has been pointed out that farmers are naturally concerned about utilizing their development rights, and that while uncertainty about these exist, farm management is likely to suffer. The County can mitigate the deleterious effects of this situation by the adoption of policies and practices which facilitate the separation of the development and agricultural components of land value. The policies should be aimed towards convincing farmers that they will not suffer financially in the future from committing themselves to agricultural plans and investments in the present. The most concrete form of loss would arise when a farmer makes an investment in improvements and then finds that he can either 1) utilize his development rights, and lose the use of his improvements, or 2) utilize his improvements, foregoing some of his development value, but not both.

The most important step in separating the development rights from the agricultural operations is, as described above, convincing the farmers that the A-60 zoning will not be weakened. To the extent that confidence in the zoning is established, thoughts of subdivision into 10 or 20 acre ranchettes fade away.

Adoption of a policy that the clustering of A-60 development rights will be facilitated and encouraged should be of additional help in the farmer's planning. It will prevent the necessity of breaking up farms into 60 acre parcels in order to use development rights, and will permit the retaining of the principal acreage in agriculture.



## B. Factors of Production

### 1. Climate, Land and Water

A lack of on-site feed production is the principal drawback resulting from Marin's climate, land and water resources. However, there now exist significant and practical opportunities for improvement in land productivity. Specific predictions of capacities for improvement are difficult to make since detailed soils, slope, hydrologic, and climate data do not exist for areas within the agricultural zone. Recommendations can, nonetheless, be based upon the opinions of the experts consulted and upon the experience of individual operators.

The production of feed from Marin agricultural land is possible through a wide range of techniques ranging from improving existing dry range to the construction of ponds for recycling effluents and sprinkler irrigation of hay fields.

a. Improvement of dry range. Standard grazing management techniques are recommended in the Tomales Bay Study as a means of improving pasture yield. Among these techniques are proper timing and intensity of grazing, fertilization, and revegetation. Timing and intensity of grazing are largely management decisions, though the Soil Conservation Service recommends scattered stock pond construction as a means of distributing livestock grazing evenly.

Reseeding and regular fertilization are regarded, both by range experts and by many ranchers interviewed, as the most appropriate means of maximizing range yield in Marin County. According to Lloyd Harwood, Sonoma County's range specialist, reseeding with proper fertilization and management can double the grazing capacity of range over native grasses. Reseeding can be effective wherever soils are at least 18 inches deep and slope does not exceed 30-35%. Not surprisingly, many ranchers have already undertaken some such pasture improvement program. According to the survey, 70% of Marin ranchers



have reseeded some part of their ranch -- though often only converted hay-fields -- and 20% fertilize regularly.

Sample costs for reseeding and fertilizing in north coast valleys run from \$36.00 to \$38.00 per acre. A general cost breakdown compiled by Lloyd Harwood includes the following items:

| <u>Item</u>                        | <u>Cost per Acre</u>   |
|------------------------------------|------------------------|
| 10 lbs. subcover                   | \$8.00                 |
| 4-6 lbs. perennial rye             | \$1.60 - \$2.40        |
| 2 lbs. harding grass <sup>1)</sup> | <u>\$3.40 - \$4.00</u> |
| Subtotal                           | \$13.00 - \$14.40      |
| fertilizer 0-20-0                  | \$13.00 (average)      |
| soil preparation <sup>2)</sup>     | <u>\$10.00</u>         |
| Total                              | \$36.00 - \$38.00      |

A publication of the Marin farm advisor's office recommends the application of 400 pounds of phosphorus fertilizer per acre every four years, along with adequate grazing, to maintain a range. At 1973 prices, this would amount to \$4 to \$5 per acre/year. Reseeding has an indefinite lifespan. Figuring the costs of repaying a ten-year loan for initial preparation at 11% interest, plus recurring annual maintenance costs, the annual costs for reseeding and fertilization of a 950 acre completely usable range would vary from \$569.32 to \$601.73.

The application of this cost-yield data to the sample cash flow for a cow-calf operation contained in the appendix indicates that the costs of reseeding and fertilization are more than counterbalanced by increased income derived from

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<sup>1)</sup> These figures reflect a recent increase in the price of seed of 60%, due to drought in their source area. Prices are expected to drop, though not to their previous levels.

<sup>2)</sup> Assuming the rancher owns his own equipment and does his own work.





increased pasture carrying capacity. Figuring a doubled carrying capacity,<sup>1)</sup> net returns to management and land on the 950-acre ranch described in the sample double to \$5,600. The subtraction of the annual costs of reseeding and fertilization from this figure yields a net income ranging from \$4,998.27 to \$5,030.68, an increase of 78% to 79% over the previous income figure.

The benefits of reseeding and regular fertilization accrue primarily to cow-calf and sheep operations. Dairies, relying chiefly upon harvested roughages and grains to feed their milking herd, could benefit by this practice only in reducing the acreage necessary to pasture their replacements.

The spraying of dairy effluent to provide a cheap source of fertilizer has been attempted by some dairies in the county. Though potentially effective, in practice this technique has its drawbacks. Dairy effluent is largely nitrogen, an element vital to the growth of range grasses. Nitrogen is normally supplied to seeded pastures by nitrogen-fixing bacteria growing on the roots of legumes. Over-application of nitrogen without compensatory applications of phosphorus tends to stimulate grass growth to the detriment of legumes, upsetting the balance of nutrients available from the pasture. In attempting to minimize costs, dairymen tend to spray their effluent too heavily on pastures near their milking barns, while minimizing their applications of commercial phosphorus, thus setting this imbalance into motion.

Effluent spraying is most justifiable as a pollution control technique rather than solely as a source of fertilizer. Costs of this method are presented in the pollution control section of this report.

Expansion of the area available for dry range pasture would be possible through drainage improvements in some interior lowlands. A Chileno Valley

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<sup>1)</sup>The doubling figure is based on estimates from Lloyd Harwood, Sonoma County range specialist.



rancher reports the drainage of one of his pastures adjoining Chileno Creek has extended its utility by several months each year.

b. Use of silage. The use of Marin's winter rains to grow crops for summer use as silage is recommended by U.C. Davis range specialists and is now being attempted on a dairy ranch on the Point Reyes Peninsula.

The term silage applies to a feed crop that has been harvested while still green and allowed to ferment for a month or more before being used for feed. Silage has approximately the same nutritional value (per ton, dry matter) as the same crop processed into hay. Unlike hay, silage need not be dried in order to be stored. Thus in many parts of West Marin, where warm, dry curing weather is not reliably available, ensiling represents the most practical means of storing winter grown crops for summer use.

An estimate of the costs of producing silage in Marin County can be assembled from cost of production sheets published by the U.C. Agricultural Extension. No single publication applies entire to Marin, so the analysis in Table IV- 1 combines the experience of two comparable counties. Growing costs are taken from Santa Barbara County sample production costs for dry land oat hay (1971) and harvesting and ensiling costs are taken from sample costs for double cropped irrigated oat silage in the San Joaquin Valley (1973). Annual land rent is taken as \$10/acre, the value used by the Marin County assessor in estimating assessments for Williamson Act contracts. An interest rate of 11% is used.

On a pound for pound basis, three tons of silage is the nutritional equivalent of one ton of alfalfa hay. Figuring the price of alfalfa hay at \$56/ton (the average price of two major suppliers in Petaluma as of August 14, 1973), silage would appear to be a profitable feed alternative even at a yield of five tons per acre, given the above assumptions. Inflating the costs of silage



TABLE IV-1  
COSTS OF PRODUCING SILAGE

1. Costs of Producing Oats for Silage

| <u>Item</u>                  | <u>Cost per Acre</u> |         |
|------------------------------|----------------------|---------|
| Labor @ \$2.60/hour          | \$2.60               |         |
| Fuel and repair              | 5.03                 |         |
| Fertilizer, seed & herbicide | 16.10                |         |
| Miscellaneous                | <u>1.35</u>          |         |
| Annual production cost       |                      | \$25.08 |

Depreciation and interest on equipment:

|                              | <u>Depreciation</u> | <u>Interest</u> | <u>Total</u>   |
|------------------------------|---------------------|-----------------|----------------|
| Crawler tractor              | \$1.60              | \$1.50          | \$3.10         |
| Wheel tractor                | 0.28                | 0.17            | 0.45           |
| Other                        | 2.00                | 1.10            | <u>3.10</u>    |
| Subtotal                     |                     |                 | \$6.65         |
| Land rent                    |                     |                 | 10.00          |
| Other miscellaneous overhead |                     |                 | <u>1.00</u>    |
| Annual fixed costs           |                     |                 | \$17.65        |
| Total Annual Costs           |                     |                 | <u>\$42.73</u> |

2. Costs of Producing Silage from Oats

|  | <u>Yield 5 tons/acre</u> | <u>Yield 10 tons/acre</u> |
|--|--------------------------|---------------------------|
| Cost of oats (see above)                           | \$8.54                   | \$4.27                    |
| Chop, haul & pack @ \$2.50/T<br>(contract)         | 2.50                     | 2.50                      |
| Cover material @ 14¢/T                             | <u>.14</u>               | <u>.14</u>                |
| Subtotal   | \$11.18                  | \$6.91                    |
| 20% loss due to seepage,<br>spoilage, fermentation | 2.24                     | 1.38                      |
| Depreciation, interest, upkeep<br>on silo          | 0.32                     | 0.32                      |
| Feeding cost                                       | <u>0.80</u>              | <u>0.80</u>               |
| Total  | \$14.54/ton              | \$9.41/ton                |





production to figure representing its nutritional equivalent to alfalfa hay yields:

|                           | <u>Yield</u>      |                    |
|---------------------------|-------------------|--------------------|
|                           | <u>5 ton/acre</u> | <u>10 ton/acre</u> |
| Equivalent cost of silage | \$43.62           | \$28.23            |
| Savings over cost of hay  | \$12.38           | \$27.77            |

In fact, at the present price of hay, a grower would have broken even with a yield of 3.58 tons to the acre. Actual estimates of yields vary. The Point Reyes grower mentioned previously feels 10 tons per acre to be conservative.

c. Irrigated pasture. The use of low cost irrigation water to increase pasture yields shows some promise, particularly in the light of current high feed costs. Only 500 acres of Marin's pasture land are now irrigated, primarily because of a lack of cheap water. However, topographical, climatic, and soil factors place somewhat more generous bounds on the potential extent of irrigated pasture, and new water sources may become available.

New sources of irrigation water are described in two recent sewage treatment proposals. A regional plan by the U.S. Army Corps of Engineers proposes the application of regional effluent at six acre feet to the acre per year on agricultural lands in Marin and Sonoma counties.<sup>1)</sup> The Marin County Planning Department has proposed a more modest, but more flexible, system of 23 relatively small lakes (3,000 to 13,000 acre feet as opposed to 22,400 acre foot Lake Nicasio) to be scattered throughout the two coastal counties and to be used not only for irrigation but for recreation, wildlife management, fire protection, etc. The economic desirability of either of these proposals cannot be determined here, since they are primarily waste disposal systems. Determinations of reservoir capacity will have to recognize, however, that

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<sup>1)</sup> According to Marin's farm advisor, this is double the required saturation.



while effluent flow increases during the winter rainy season, agricultural water demand will drop markedly during those months. For the purposes of this report, it is assumed that a water treatment agency will provide water free of charge, at ground level, to ranches.

Assuming that irrigation water is available at no cost, irrigated pasture becomes a relatively low cost source of feed. A simple comparison can be made of two alternatives: the first would be to purchase alfalfa hay for roughage and the second would be to use the increased yield of irrigated pasture as a substitute for hay. This comparison is relevant to dairy ranches where roughage is fed most of the year and does not apply as well to beef or sheep operations where roughage serves as a supplement. Particularly in the case of beef or sheep operations, each operator must analyze carefully the alternative of irrigation or dry range, considering both the characteristics of the land and the actual return expressed in increased production of animals that would result.<sup>1)</sup>

Table IV-2 presents examples of cost estimates that were taken from two publications of the California Agricultural Experiment Station, Irrigated Pastures in California and Permanent Sprinklers for Hilly Pastures. The former reference was published in 1967 so costs were adjusted for price increases since that date.

Findings at U.C. Davis, based on experiments on yearling beef steers, indicate that total digestible nutrients (TDN) per ton of alfalfa are approximately equal to the TDN/ton of irrigated pasture. When the costs from Table IV- are converted to an equivalent annualized cost (using a 20 year time horizon and a 10% discount rate) the following indications of costs per ton of nutrients equivalent to alfalfa hay results:

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<sup>1)</sup> A comprehensive example of such a calculation, written for the ranch operator, is Economics of Range Improvements: A Rancher's Handbook to Economic Decision Making. Utah Agricultural Experiment Station Bulletin 466, April 1967.



TABLE IV-2

## AN EXAMPLE OF COST FOR IRRIGATED PASTURE

Initial Costs

| <u>Item</u>                              | <u>Initial<br/>Cost<br/>Per Acre</u> | <u>Life<br/>Expectancy<br/>(Years)</u> |
|--|--------------------------------------|--|
| Grading, including drainage              | \$115                                | Inadequate                             |
| Additional fencing                       | 30                                   | 20                                     |
| Irrigation preparation                   | 18                                   | 7                                      |
| Turnout gates                            | 4                                    | 10                                     |
| Stock water facilities                   | 4                                    | 20                                     |
| Pasture stand                            | 38                                   | 7                                      |
| Tillage equipment (tractor, mower, etc.) | <u>90</u>                            | 10                                     |
| Total                                    | \$299/acre                           |  |

| <u>Annual Cost</u>            | <u>\$/Acre</u> |
|-------------------------------|----------------|
| Increased taxes <sup>1)</sup> | \$ 4.86        |
| Fertilizer                    | 18.13          |
| Labor and equipment           | 21.88          |
| Interest <sup>2)</sup>        | <u>10.71</u>   |
|                               | \$55.58        |

<sup>1)</sup> An increase in property taxes is included, reflecting the higher market value of irrigated pasture land. The tax estimate is based on a tax rate of \$8.50 per \$100 of assessed value and an increase in value of \$20/year land rent capitalized at 8 3/4%. Land rents of \$30 (which are \$20 above Marin's current values) are typical for irrigated pasture in Amador, Siskiyou, Glenn and Contra Costa counties. See Leasing Practices for California Agricultural Properties, U.C. Agricultural Extension, April 1972.

<sup>2)</sup> An approximate estimate of interest expense is based on an assumed loan of 80% of initial costs and a 9% interest rate.





| <u>Yield</u> | <u>Price per Ton</u><br>with interest expense: |                 |
|--------------|--|-----------------|
|              | <u>Excluded</u>                                | <u>Included</u> |
| 3½ tons/Acre | \$30.00  | \$33.00         |
| 5 tons/Acre  | \$21.00  | \$23.00         |

These costs can be compared to the average price of alfalfa hay. (As noted earlier, a recent average was \$56 per ton, but this is an all time high and the price fluctuates unpredictably.) The illustration of returns from irrigated pasture must be considered as an example that serves only to justify a more detailed analysis on specific ranch properties. The utility of a given crop will vary according to the species, age and condition of the consuming animals, on the use of the crop (pasture, green crop, silage) and on the crop's water content. Further, seasonality of use and production must also be considered. Alfalfa can be purchased and fed during the winter months, when pasture does not grow and range will not bear animal traffic. On the other hand, irrigated pasture would continue to produce during the summer months in Marin, while dry range is at its least productive point.

Pasture management is also a critical factor in determining productivity, as is soil type, topography, and microclimate. Further, the costs of irrigated pasture vary depending upon the type of irrigation permitted by slope conditions. The costs in the example were based on border irrigation, where water is distributed by parallel trenches, but this can be done on lands having a slope of 4% or less in the direction of flow and minimal cross slope. Less than 3% of the land within the agricultural zone meets these criteria. Therefore, sprinkler irrigation would have to be considered in the majority of cases, so it is useful to point out that permanent sprinklers are not the only or in any way the cheapest means of irrigating rolling terrain. A number of movable sprinkler systems are available, including tractor-towed lines, self-propelled lateral or pivotal systems, and hand-moved pipe and sprinkler operations.



While initial investments in such systems are substantially below those quoted for permanent sprinklers, ongoing labor costs are higher. Depending upon labor costs and the availability of rancher's time, these less expensive sprinkling techniques might easily lower overall production costs to a level somewhere between the extremes cited above.

In summary, a general conclusion can be reached that the possibility of irrigated pasture deserves further consideration, but specific plans must be judged on an individual ranch basis.

Actual planting of irrigated pasture depends upon several variables other than its economic feasibility. The sources of recycled water must become available and a means of low cost distribution worked out. Initial study and planning on individual ranches, and follow-up advice, must be available from the County, the Soil Conservation Service, or from some other source. Most importantly, operator interest must be maintained. The agricultural viability survey indicated that 40% of ranchers interviewed expressed an interest in using low- or no-cost sources of irrigation water. County policies must be pursued to assure operators that the substantial investment involved in irrigated pasture will have an opportunity to return long-term benefits.

## 2. Pollution

The seriousness of the dairy pollution problem in Marin has already produced some County action. An engineer has been retained, in conjunction with the Soil Conservation Service, to assist each dairy in complying with the Regional Water Quality Control Board's requirements. It is anticipated that this project will take two years (August 1973 through August 1975). The engineer is currently visiting each dairy in order to set up preliminary cost studies for each waste system. A feasibility study will then be prepared for the Board of Supervisors showing how the County can assist the dairyman in meeting pollution control requirements.



It has been established that there is no single answer to the problem of dairy waste. However, a number of methods have been suggested which could work in Marin. The two most likely methods seem to be land disposal methods. Land disposal methods will work provided there is adequate land upon which the waste may be disposed. For those without sufficient land for this method, different and more costly methods will have to be considered.<sup>1)</sup>

Many Marin dairies already have some form of waste recycling which they have developed on their own. Some of these systems will have to be modified to meet the Regional Water Quality Board requirements. Some will require few if any modifications. In the following paragraphs, two case studies of current Marin land disposal systems are presented. They suggest some of the costs, benefits, and problems of recycling in the county.

#### One Pond or Sump Method

Spray disposal begins by taking barn wastes, including those from cleansing operations, and putting them into a concrete sump. The slurry waste (mixture of liquid and solid wastes) is then pumped and sprayed on the land with a "rainbird" irrigation sprinkler system. The sprinkler must be moved about to prevent excessive spray in one area. The waste must also be agitated to prevent settling prior to spraying.

The case study concerns a dairyman in the Petaluma area. The system is for a 180 cow dairy and was installed in 1970. The following is an analysis of construction costs:

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<sup>1)</sup> See Appendix for description and cost of other waste systems which are being used by dairies in other parts of California.





|  |            |
|--|------------|
| Concrete storage facility (17,000 gallon capacity) | \$5,600    |
| 30 horsepower Mitchell pump                        | 3,000      |
| Movable pipe, 900 feet @ \$1/foot                  | 900        |
| Nozzle   | <u>500</u> |
|  | 10,000     |
| Excavation   | <u>200</u> |
| TOTAL  | \$10,200   |

This dairyman has had less success with his system primarily because the pasture he sprays is planted with Alta fescue, which has limited feed uses. Therefore, he fails to get the reduced feed cost benefits that the Tomales Bay dairyman gets from his grass varieties. When asked why he had planted such a variety, he said it was on the advice of a former farm advisor who suggested it because it has been a popular variety in other areas of the United States. He plans to remove the Alta fescue when is financially able to do so and plant varieties which will allow him to get more from his waste recycling system.

#### Two-Pond Method

The second disposal method is one which uses two ponds. One is used to collect liquids and the other to collect and store solids. The liquid is applied immediately to the land. The solids are stored in the pond, then dried in the winter and spread on as fertilizer in the summer. It is generally agreed that the two pond method is better than the one pond method because agitation is not necessary.

The two-pond case study is a 188 cow dairy in the Tomales Bay area. The following is an analysis of the costs of construction:



|   |                           |
|---|---------------------------|
| Earthen pond for liquids                                      | \$ 600 <sup>1)</sup>      |
| Pond pump, hose, etc.   | 1,600 <sup>1)</sup>       |
| Truck (second hand) converted to<br>tank for irrigating field | 3,423 <sup>1)</sup>       |
| Concrete ramp for solid manure pit                            | <u>1,200<sup>2)</sup></u> |
| Total   | \$6,823                   |
| Pit is emptied once a year @                                  | \$1,000                   |

The soil near this dairy is predominantly non-porous clay and effectively contains liquid wastes when used in pond construction. Areas lacking such soil would have to use considerably more expensive concrete ponds.

Further, the case study dairyman had great success with the variety of grass he used. In one year, he was able to begin grazing on February 1, earlier than any of his neighbors.

Many Marin dairymen were able to get financial and technical assistance for constructing recycling systems through the REAP program prior to its demise. At this time there is no similar program available. It is recommended that the County investigate possible ways to establish a program similar to REAP to facilitate construction these systems.

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<sup>1)</sup> Cost in 1970.

<sup>2)</sup> Cost in 1960.



## C. Management Actions

### 1. Size, Technique, and Credit

Recommendations for increases in size and mechanization in dairy and live-stock operations would differ somewhat between the two categories of industries. To a point, the expansion of dairy herd size is associated with increasing economies of scale. Optimum dairy herd size is difficult to fix because numerous factors are involved. According to U.C. Berkeley dairy economics expert Richard Courtney, economies of scale do not increase proportionately with increasing dairy herd size. Maximization of the use of inputs, rather than herd size alone, is the critical efficiency factor. With carefully controlled feeding, breeding, and animal health programs, production levels can be significantly increased.

Technological improvements in the dairy business which might profitably be adopted by more ranchers in Marin include loafing barns -- for better animal health and increased production during the rainy season -- and a range of labor saving milking facilities. Of the dairymen in Marin who reported plans to make major investments in new capital, not including pollution facilities, loafing barns and new milking facilities were most frequently mentioned.

Because high quality replacement heifers are hard to obtain on the market, they are usually raised on pasture available at the ranch. Breeding programs to improve herd quality demand high culling rates and large numbers of replacements, so acreage expansion and dry range management should be considered in the management program. Land cost lowered by development controls should make such expansion costs competitive with the present practice of renting supplementary pasture.





As in dairying, maximization of the use of inputs is also critical to beef and sheep operations. While net return may increase through a policy of growth, optimum return will not be achieved unless a more systematic approach is used. Improvement of the herd efficiency ratio<sup>1)</sup> should be the primary concern of livestock men, and can be best accomplished by concentrating on three factors in a breeding program: fertility, size, and milking ability. However, the rancher must also be sure to match his cattle or the cattle he is striving to produce with his ranching and economic environment. Smaller cows require less nutritionally, are easier to manage, and can be improved as well through cross breeding or outcrossing. For some environments, this may be more desirable than raising large cows, especially where the rancher requires a higher turnover.

Diversification is another method of coping with marginality. Many Marin ranchers have begun raising more than one product in order to get the most effective use of their resources. The combined grazing of beef and sheep will allow for more efficient use of pasture and add appreciably to a rancher's income.

Input maximization also relates to pasture utilization. Dry range management and pasture irrigation can definitely help optimize operations on ranches where these techniques are appropriate. On other ranches, techniques designed to maximize production through lowering mortality rates may be more effective, if the rancher must choose a single technique to incorporate into his operation. Maternity barns are one device that has been suggested for this purpose.

Both range improvement and capital construction, needless to say, require funding. Loans at the present time are available from private banks and from such cooperative institutions as the Production Credit Association. The Production Credit Association is authorized only for short-term loans (maximum term 7 years) but is willing to lend major amounts of capital subject

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<sup>1)</sup> Herd efficiency ratio is the weaning percent times the weaning cow weight ratio; it provides a measure of the actual pounds of cow produced per number of cows actually maintained.



to certain conditions. Similar to other lending institutions, Production Credit requires income tax and production records that demonstrate a reliable past history. In addition, the rancher must show that the improvement for which capital has been requested will increase significantly his production and, with Production Credit, generate enough income to amortize the loan within 7 years. The Association claims an average interest rate of 7.8% over the past 6 years but at the present time must charge 9.8% due to the high cost of money. Officials of this institution claim to hold 16% of the loan market in Marin (double that in Sonoma) and forecast an increasing volume of such business in years to come.

Commercial banks in the area were contacted to determine their involvement with agricultural business. The majority of loans financed by such banks were the extremely short-term (1 year) production loans. This type of loan is usually taken out to purchase a year's supply of animal feed and is repaid at the end of a year. Major loans of capital are available at normal interest rates, but lenders interviewed had not done any significant amount of this type of business. Both types of loans are usually secured on the borrower's herd, as it is both valuable and easy to dispose of.

Government funding was at one time available through the Agricultural Stabilization and Conservation Service (ASCS) REAP program mentioned previously. The REAP program contained funds for cost sharing in the implementation of projects recommended and approved by the ASCS. Although REAP funds remain allocated by Congress, the President has prevented their distribution through impoundments. According to the ASCS, REAP funds were unacceptable, on principle, to many Marin ranchers.

In support of its agricultural preservation policy, the Marin County Board of Supervisors should consider some form of financial assistance for range or



capital improvements for ranchers within the agricultural zone. The present prime rate of 9% offered by private banks clearly suggests some form of county sponsored low interest loan program.

## 2. Advice

As previously mentioned, Marin's Farm Advisors Office is too understaffed to be capable of providing the advice necessary for improved management. This office is charged with the responsibility of farm and home advising, so it is accessible to urbanites having problems with insects and plant diseases as well as commercial ranchers. This burden effectively limits the time available for ranch advisement.

According to the survey we conducted, some 35% of those interviewed expressed interest in the idea of utilizing extensive management services on a cooperative basis. This could be done under the auspices of the Farm Advisors Office or through the creation of a new community services district for the agricultural areas. Details of the administrative organization involved will be provided in the Economic Impact Study, but some suggestions as to the types of services which should be provided can be given here.

Modern agricultural operations have increasingly begun to use specialist advice and services at every point of concern, finding that in the long run the expense of such input is more than repaid by increased production, longer equipment life, and higher quality yields. In Marin, the most useful advice and services would come under the areas of (a) herd inspection and improvement, (b) feed management, and (c) financial planning.





#### a. Herd Inspection and Improvement

This would involve analysis of herd management, including animal health and programs to lower mortality rates but more directly relating to the development of breeding programs. A great many options are available to the rancher in terms of the type of animal he wishes to produce, but with varying results dependent upon the suitability of the animal for that farm's particular environment. Cattle vary in terms of their feed requirements, resistance to disease, milking capacity, and so forth, so by breeding for certain characteristics the rancher can produce cows that are suited to his farm. This cross breeding for special characteristics is, however, extremely technical and needs to be worked out with expert assistance.

#### b. Feed Management

With feed costs skyrocketing, it has become more important for livestock operators to get the most for each dollar spent. A comprehensive feeding program is a necessity in order to get the highest possible production from the animals and avoid wasting expensive feed. A nutritional advisor could advice dairymen on feeding requirements of their cows and the benefits of dividing their herds into production strings to give different level producers the quality, amount, and type of feed they need.

#### c. Financial Planning

Two major types of services should be provided in this area: accounting and financial advice.

i. Accounting Advice. The availability of credit is directly related to the ability to show a good financial statement. The banker wants to see a farm's economic history on an accrual basis which shows all of its assets and liabilities. Secondly, for tax purposes, the farmer must keep his



records on a cash receipts and disbursements basis. If the farmer can show the holding periods of his assets, he can get an investment credit on them which may be 5 to 7%. Also, through accurate forecasting of taxable income, the rancher's cash flow statement can be arranged to minimize his tax bill. Thirdly, the "housekeeping problems," such as calculating workmen's compensation, payroll taxes, property tax assessment forms, are important too. All of these are generally too much for a farmer to handle in addition to his farm work, and he tends to overlook many ways of saving.

ii. Financial Advice. The preparation of capital improvement and expansion programs as well as estate plans demands competent legal and financial advice. To be assured that a certain program is really feasible, counsel should be available to check questionable details which the rancher does not possess adequate knowledge to evaluate.

### 3. Social Structure

As mentioned in a previous section, problems of age and resistance to changing technology impede efforts to strengthen the position of Marin County agriculture.

#### a. Age

For those aging operators with offspring who wish to carry on the business, it is essential that they undertake financial planning to mitigate the effects of federal estate and state inheritance taxes. By preparing an estate program ahead of time, the assets which must be transferred through the estate process can be reduced significantly to minimize the accompanying tax bill. Transferring as much property as possible to the young rancher through gifts, sales (with payment spread over long periods), and stock transfers where family corporations exist is desirable, but runs into problems where the older ranchers are afraid of losing control over their businesses. The demonstration of savings available through competent estate planning may be of use in changing their minds.



The county should investigate the types of roles it could play in increasing farmers' knowledge about the benefits of estate planning. The county's efforts could not substitute for competent legal advice, but may serve to initiate steps to better financial planning.

Attracting younger people to the occupation of farming in Marin is another means to support the future of agriculture in Marin. Children reared in Marin are particularly aware of the life-style advantages of living and working in western Marin. Much interest in ranching has been shown by young persons, as shown by participation in Marin's 4-H and Future Farmers of America (FFA) programs. The 4-H programs in rural Marin claim a membership of nearly 1,000 persons. These programs are quite diverse, with activities in traditional livestock and dairy subjects as well as public speaking, bicycling, and other non-agricultural subjects. The FFA program is more exclusively oriented toward agriculturally relevant activities, with subjects in livestock management, dairy management, and equipment repair to name a few. Centered in Tomales High School, the program is directed to high school age boys and girls with a participation of seventy-three youths. From records kept by Earl Smith, the program's leader, he estimates that over the past 6 years some 60% of graduated students have gone on into agriculture or agriculturally related business.

Young, would-be ranchers without equity in agriculture face severe difficulties in acquiring capital to set up operations. Where in the past costs of land, animals, and equipment were relatively inexpensive and made it possible for young ranchers to go into business with little capital, today large amounts of capital are required to purchase these items. Estimates of the cost of setting up a competitive grade A dairy range from \$550,000 to \$750,000 depending on costs of land and quota. To borrow this amount of capital, a person would need equity in the neighborhood of \$150,000.





An interesting partial solution to the attrition problem might be either to provide "seed" money to some promising youths for setting up ranches or to work out arrangements with existing ranchers whereby the youth would work for the rancher in return for equity in the operation. Details of such programs would have to be developed on an individual basis according to the personal and economic characteristics of those involved.

Finally, it can be observed that the policies regarding development recommended in this report should tend to bring more agricultural land onto the market at agricultural value. This land, with its development rights dedicated elsewhere, will be ideal for the expansion of existing ranches or for the institution of new operations. It will also result in lower estate taxes in cases where offspring plan to carry on the agricultural operation.

#### b. Adoption of Changing Technology

The demonstration of determination to retain west Marin's pattern of agricultural use should make the adoption of changing technologies a more feasible proposal for most ranchers, although some, due to their age and independence, will continue to rely on traditional practices.

The management advice and improvement programs we have recommended will have to be aggressively disseminated in order to overcome the traditional resistance to taking advice. Demonstration of benefits should be undertaken through experimental programs and through dissemination of their conclusions. At present, the Farm Advisor seems to regard advisement in many cases as a futile effort. The Advisors Office is one of the smallest in the state and relies heavily on the resources of other counties. Strengthening both the image and capacities of this office should be a high priority if ranchers are to become more dependent upon outside advice.



The development policies previously mentioned should serve to remove speculative thoughts and inspire more commitment on the part of ranchers. In combination with an aggressive advisement program, resistance to change can in general be overcome and health restored to this valuable industry.

#### D. Development Policies

##### 1. Agricultural Zone

To facilitate the implementation and administration of programs, a special planning area for agriculture should be defined. The boundaries of such a zone must be somewhat more limited than those of the present county agricultural preserve. The existing agricultural preserve's "islands" in east Marin do not appear to merit the public investment this report recommends for the agricultural zone. The Tomales Bay recreation corridor and the Nicasio Valley are also special cases and must be dealt with separately.

The recommended development controls described below would thus apply to an area bounded on the north by the county line, on the west by the County General Plan's coastal recreation corridor, on the south by the northern boundary of the Nicasio General Plan study area, and on the east by the County Assessor's recommended agricultural protection boundary.

##### 2. Control of Development

Programs for the agricultural zone should include the specific objectives of facilitating agriculture by minimizing the intrusion of incompatible development. Two types of development are possible under the A-60 zoning that predominates in this area: (1) single family residences on lots of 60 acres or more, and (2) cluster developments where the development rights under existing zoning are assigned to smaller parcels, with the major acreage remaining undeveloped. Because large lot residences impede the expansion



of professional ranching operations and remove land from agricultural use, they are less desirable than clusters. The regulations proposed below do not specifically prohibit large lot residences. However, market factors, discussed later in this section, indicate that clusters are much more salable than homesites on lots of 60 acres. They also usually incur far less road, water, and power service costs. The team is continuing to explore means to encourage cluster development and the legal and administrative considerations involved.

Through the building permit application process, the county has the power to regulate development and prohibit such developments as would not be in conformance with its general plan. This process enables the county to forbid the building of homes felt to be unacceptable on two basic grounds:

a. That such development would be deleterious to the health and welfare of the populations, as when the development could not provide for adequate water supply, sewage leaching capability and access; and

b. That such development would degrade the environment, as when it would necessitate excessive grading or filling to the detriment of the natural topography and soil stability.

### 3. Purchase of Development Rights

These legal parameters will not provide the county with adequate authority to prevent all development that is undesirable because it is incompatible with agriculture. Moreover, the over-zealous use of these tools would burden ranchers with too much of the cost of preserving agriculture. Residents of east Marin benefit from the presence of agriculture and open space in the county and should share the costs of preserving it. A program of development rights acquisition is therefore proposed: The county would,





where desirable, purchase some, or all, of a property owner's development rights.<sup>1)</sup> Criteria for purchase would include the following considerations:

- a. The inability of the county to prevent undesirable development through the building permit regulations described above,
- b. The likelihood that development would result in the creation of mutual nuisances (i.e., trespassing and dog problems resulting from development, smells, flies, and noises resulting from ranching operations<sup>2)</sup>), and
- c. The extent to which the developer's proposals are unsatisfactory with regard to the county's aesthetic goals.

The purchase of development rights could be incorporated into the county's program for planning and purchasing open space. The capability of less than fee simple purchase would add to the flexibility of the program and make the limited amount of funds available more effective in maintaining agriculture and preserving open space.<sup>3)</sup> It is understood that the county would probably need to raise the level of expenditures for open space. Estimates of the amounts that would achieve various levels of preservation will be made after data from the Assessor's office can be analyzed.

This development control program should have several critical impacts:

- a. Building permit denial and development rights purchase will limit development through the use of the police power in the former case and the use of public funds in the latter.

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<sup>1)</sup> Because the county can offer property owners immediate payment rather than terms, it is felt that the county's bargaining position would be relatively strong.

<sup>2)</sup> If these are sufficiently severe, the development may be forbidden on health grounds.

<sup>3)</sup> We are still in the process of considering legal problems that may be involved in the use of this tool.



- b. Equally important, this demonstration of county commitment to agriculture will help reduce speculative land values to a level reflective of existing zoning.
- c. Lower land values will help stabilize agriculture in the county, permitting long-term planning and capital investment on the part of ranchers and enhancing the possibility of expansion of existing ranches.

#### 4. Marketing Factors

The lowering of land prices per se does not guarantee the availability of land at agricultural rates. These proposed development control regulations do not explicitly prevent the absorption of land in west Marin into non-agricultural "ranchettes" or 60 acres or more. Marketing factors, however, indicate that small lot cluster development would tend to predominate in the zone despite regulation.

Real estate marketing projections based upon current data are risky. The speculative land prices prevailing on large acreages have increased the attractiveness of smaller lots. Moreover, many of the recent real estate transactions in the area have involved the relatively small sections zoned A-20 and A-40. Non-speculative pressures have also driven up the price of large acreages. The purchase of Point Reyes ranches by the Park Service at \$950 per acre, according to one major west Marin realtor, has tended to inflate land prices. Several of these ranchers, moreover, immediately reinvested considerable sums in relocating or expanding their operations on private land in west Marin, again inflating prices. Pressures to purchase adjacent properties by Synanon have had a similar effect. Thus, the development controls proposed here, along with the subsiding of these temporary inflationary pressures, should eventually reduce the purchase price of a ranchette.



Two factors, however, discourage the development of large acreage homesites in the area. First, development costs per unit would generally be higher for large acreage homesites than for clusters. With subdivision approval contingent upon the provision of access, water, utilities, and sewer connections (where necessary), the costs of developing scattered, isolated homesites would be extremely high. A prominent west Marin realtor estimated that price tags on such 60 acre homesites would range from \$50,000 to \$60,000, even assuming a raw land cost of \$500 per acre.<sup>1)</sup>

Second, relatively small parcels are more in demand than 60 acre parcels even when cost differences are discounted. According to several Marin realtors, buyers generally dislike the increased liabilities and property taxes inherent in large acreage residential sites. A Nicasio Valley rancher-developer, when interviewed, estimated that a 20 acre parcel would bring two-thirds the purchase price of a 60 acre parcel. Sixty acre parcels have been on the market at \$800 per acre near Black Mountain since February, 1973 and, as of September of the same year, none have been sold.

##### 5. The Nicasio-Tomales Bay Zone: A Special Case

The Nicasio Valley planning area and the coastal recreation corridor along Tomales Bay were both excluded from the area subject to the regulations described at the outset of this section. Several factors lie behind this separation.

The need to concentrate county resources is the most obvious justification. The need for a buffer zone, where development would not result in urban nuisances -- or complaints of agricultural nuisances -- is also paramount. Particular cost and land use suitability factors also justify this division

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<sup>1)</sup> A ranchette developer could conceivably avoid this cost by grouping homesites around a point of common access and fanning out 60 acre wedges. Such concentration of homesites would seem to eliminate the isolation that would appear to be the major selling point of large acreage parcels, however.





and explain the particular boundaries between the two zones; both Nicasio and the Tomales Bay shoreline are characterized by particularly high land costs due to their accessibility and attractiveness. The cost of development rights purchase would be thus proportionately higher, and the goal of lowering land costs that much more difficult to achieve. Nicasio, because of its hilly and verdant landscape and because of its proximity to existing urban areas, it also less well suited for agriculture than the more gently rolling, remote valleys to the north. The Tomales shoreline, because of its scenic qualities and its location on a regional tourist corridor, is similarly valued for development.

Although slated for less intensive county investment than the agricultural zone, this zone should not necessarily differ from it substantially. Market factors and the success of county efforts in the agricultural zone will determine the degree to which the two zones ultimately will differ.

The intent of county policy in this zone should be to permit development to the extent permitted by existing zoning while protecting existing agricultural operations and preserving the general rural character of the zone. County development approval procedures in this zone would entail the same proposal-review process as proposed for the agricultural zone. Proposals for land divisions and subdivisions would be required to meet legal stipulations as to access, water availability, sewage disposal capability, fire safety, etc. In general, proposals would only be denied by these criteria. Approval, as in the agricultural zone, would also be contingent upon the deeding of residual development rights to the county. However, the purchase of all development rights would not be attempted. In effect, this difference in policy would chiefly result in more non-agricultural development in the Nicasio-Tomales Bay zone than in the zone proposed for long-term agriculture.



The potential uses of this region are many and varied. Full-time ranching would still be encouraged. Less than professional ranching, recreational camps, small-scale crop agriculture, and purebred breeding could all be suited to the zone. A discussion of such alternative open space land uses, along with a description of uses better suited to the long-term agricultural zone, is contained in the following section.



## E. Alternative Open Space Uses

Though dairy, cow-calf and sheep operations are the primary considerations of this report, they are not the only agricultural enterprises in west Marin nor are they necessarily the most profitable. The raising of replacement heifers for dairies, the breeding of purebred sheep and steers, the hatching of turkeys, and the production of nursery crops are all practiced in west Marin. An investigation of the viability of any of these industries is beyond the scope of this report. A brief look at these enterprises, combined with an investigation of some alternative agricultural possibilities, follows.

### 1. Turkey Farming

One of the most viable agricultural alternatives discovered is that of turkey farming. Whether it is compatible with other forms of agriculture may be answered differently depending upon your sources. If George Nicholas, President of Nicholas Turkey Breeding Farms, were asked, he would probably say that turkeys are compatible only with sheep operations. With any other type of operation, the risk of disease is dangerously high due to the high susceptibility of turkeys to respiratory diseases transmitted by air from people and animals. Urban developments, therefore, would also be incompatible. If the same question were put to many dairy or livestock farmers in Marin, they would probably say turkeys are not compatible with any other forms of agriculture due to noise, odors, feathers, and aesthetic problems.

Nevertheless, in terms of viability, turkey farming seems to present one of the few alternatives available. According to Nicholas, a farmer who has the initial cash outlay could make a profitable living as a flock farmer. It would work like this: the farmer would approach Nicholas Turkey Farms (NTBF) to get a tentative approval for a contract to raise fertile eggs for NTBF. His next step would be to approach a lending institution with his tentative contract approval to determine the possibility of financing the





venture. Once the lending institution puts up the necessary capital, the farmer can set up his flock farm. He will need approximately \$50,000 operating capital and \$91,180 for building costs.<sup>1)</sup> He will also need enough land to protect the flock against incompatible neighbors and the risk of diseases that travel by air to the birds. It is possible to construct the building on a 5 acre site. However, to protect the flock against the risk of diseases, there should be ten or twenty times as much land to provide a buffer zone. The land should have adequate water and air drainage. Air drainage or movement is an absolute necessity because if air moves, the chance of lung disease is lessened. The most desirable location for turkey farms are the coastal areas because the fog and cooler temperatures make it possible for the flock owners to produce eggs late in the season.

Once the flock farmer has the land, the building costs and operating capital, he is ready to begin his operation as a flock farmer. His contract with NTBF specifies the number of eggs he is to produce. NTBF provides ongoing technical assistance to each flock farmer, i.e., veterinary and medical services as well as freight and marketing of the product.

The average income a farmer could expect to make could be broken down in the following manner:

Based on a 4,000 hen unit, with each hen laying 70 eggs per year,  
@ 35¢ per egg or \$24.50 hen/gross,

|  |           |
|--|-----------|
| Gross income (approximately)           | \$100,000 |
| Owner's wages                          | 12,000    |
| Net profit (above wages) <sup>2)</sup> | 20,000    |

NTBF also has profit sharing plans available to all affiliated with it.

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<sup>1)</sup> See appendix for breakdown of building costs.

<sup>2)</sup> This figure reflects net profit after debt service deductions.



The following table is a breakdown of NTBF yearly expenses for their Terza Ranch for 1972-73.

|                             |            |
|-----------------------------|------------|
| Salaries and wages          | \$135,558  |
| Inventory variance          | (121,376)  |
| Artificial insemination     | 2,502      |
| Supplies                    | 15,073     |
| Utilities                   | 4,692      |
| Telephone and telegraph     | 161        |
| Feed                        | 380,499    |
| Veterinary and medical      | 4,474      |
| Freight                     | 16         |
| Travel                      | 320        |
| Maintenance and repair      | 3,369      |
| Motor vehicles, gas and oil | 8,856      |
| Fees                        | 190        |
| Insurance                   | 2,356      |
| Rent                        | 40         |
| Interest                    | 18,234     |
| Tax and license             | 21,987     |
| Miscellaneous expense       | 3,870      |
| Equipment rental            | <u>137</u> |
| Total                       | \$480,958  |



It would appear that turkey farming is a real possibility to be investigated further as an economically viable operation. When the question of compatibility is examined, it is clear that there are not many other activities that could be compatible with turkey farming. As was mentioned earlier, Mr. Nicholas seemed to feel that sheep would be the only compatible operation. He also suggested that a closer examination be made of sheep as an alternative to beef consumption with the rising costs of beef today. When asked how difficult he thought it would be for a livestock or dairy farmer to change from either operation to flock farming, he said the livestock farmer would be the more likely candidate because it would be easier to convert his buildings and general knowledge to turkeys whereas it would be extremely difficult for a dairyman to do so.

## 2. Crop Agriculture<sup>1)</sup>

The viability of fruit, vegetables, or nursery crop production on a commercial scale in Marin County is questionable. Both natural resource and marketing factors in the county are less supportive of these high intensity land uses than any are of dairy, cow-calf, and sheep operations. Irrigation projects, as described above, may alter this picture somewhat, as may lowered land costs. However, with the possible exception of nursery crops, crop agriculture in Marin is better situated to hobby farming.

The reports of different interviews indicate a wide variety of fruits and vegetables were once grown in west Marin. Peas and artichokes were apparently once grown on the Point Reyes Peninsula, and potatoes were grown around Tomales. Hay was raised throughout the area for dairies, at one time. Land in northern Marin is reported as having once produced wheat and potatoes. Grapes were reportedly grown east of Marshall in warmer interior valleys.

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<sup>1)</sup> Much of the information in this section is taken from a report prepared for a graduate city planning course at U.C. Berkeley, "Crop Agriculture in Marin County," by William Dillinger.





The 1955 agricultural census included the following crops grown in Marin County: apples, peaches, apricots, pears, prunes, grapes, walnuts, honey, potatoes, artichokes, sweet corn, tomatoes, cauliflower, beans, hay, barley, wheat, vetch, oats, rye grass seed, field grown flowers, and nursery stock. Unfortunately, the census does not differentiate between crops grown in eastern and western Marin. The remarks of the agricultural commissioner included in the census indicate that many of these crops were forced out of the east side by encroaching urbanization. The cooler west side may not be able to support such a variety.

A comparison of three census reports offers a more recent history of agriculture in the county as a whole. In 1956, nursery crops, increasing with the spread of urbanization, enjoyed a gross income of over a million dollars. Field crops were the county's second most valuable agricultural commodity, grossing nearly half a million dollars. Produce crops, particularly artichokes and peas, grossed \$117,348. The income of fruits and nuts totaled only \$16,000. In 1964, nursery products suffered a decline in income, dropping to \$452,000 gross. The value of field crops (over half of which were categorized as "pasture, other") rose to \$840,000. Produce dropped to \$7,000 and fruits and nuts to \$10,000. In 1972, the value of field crops increased to just over a million dollars, and the gross value of nursery crops rose to \$796,000. Fruits and vegetables had a combined gross income of \$23,500. In terms of income, the trend is clearly away from produce toward field and nursery crops. In terms of acreage, the trend is largely toward field crops alone, however, and much of that, pasturage. Nursery crops are a high value crop requiring little land. The combined gross income of crop agriculture in Marin — less than \$2 million — suggests that, even as a whole, it is now a relatively small factor in the county's economy.



An assessment of the viability of crop agriculture would require much more detail than is possible in this section. An accurate viability assessment would require the selection of a specific parcel, with known soil, slope, groundwater, and microclimatic characteristics, a fixed land price, and a specific crop. Labor and marketing factors would have to be assumed, the resources and objectives of the owner identified, and the plans and policies of significant government agencies determined. Short of that, a general discussion of factors suffices to point out the obstacles to crop agriculture and to isolate promising species where specific figures are useful.

Five specific crops are examined: Brussels sprouts, artichokes, strawberries, nursery crops, and non-irrigated wine grapes. All five crops are climatically suited to some parts of west Marin. Artichokes and Brussels sprouts were chosen as crops which would consume relatively large acreages per farm, coincidentally preserving open space. Nursery crops and strawberries are representative of more intensively grown crops, better suited to the area's topographical, climatic, and land cost constraints. Non-irrigated wine grapes are an anomalous crop, normally requiring large acreages to perform economically but currently, because of high prices, capable of returning a living off a relatively small number of acres. The stability of grape prices and the existence of large areas climatically suited to such grape production in Marin are issues open to question.

Climate, as discussed previously, is one of the major factors affecting the viability of crop agriculture in west Marin. The cool climate and foggy summers limit the number of crops suited to west Marin but in turn provide conditions suitable to some high value cool weather crops. Major crops grown in similar climates include Brussels sprouts, strawberries, lettuce, broccoli, and artichokes. Cooler microclimates in Marin could support apples; warmer ones might support grapes.



A shortage of water might be the chief obstacle to large-scale agriculture in west Marin. The implementation of a recycling pond concept might serve the purpose, although the use of recycled effluent on crops eaten without processing raises questions of health safety. The selection of crops with minimal irrigation demands is another alternative. Common cool weather vegetables — lettuce, artichokes, Brussels sprouts, etc. — require 2 to 3 acre feet of irrigation water per acre annually in areas where they are now principally grown.

Where climatic conditions are right, however, many standard varieties of wine grapes can grow without irrigation. Annual crops which can be planted in the fall, grown during the rainy season, and harvested in the spring also do not require irrigation. Potatoes are now grown in northwest Marin according to that cycle. Lawn grass seed and rapeseed could be grown on the same basis. A third solution to the water problem lies in small-scale intensive farming of high value crops. Where the value of the crop produced is high enough to provide a living off a relatively small operation, ground water supplies can be relied upon. Flower growing operations are a case in point. Banducci's iris and heather farm at Muir Beach, for example, relies on ground water supplies during the summer. Strawberries might be grown in the same way.

Soil and topography are other significant factors. Soil quality per se is not a significant obstacle. Though little of the county's land is prime, agricultural extension personnel in Santa Cruz and Monterey counties both discounted this problem, pointing out that all farmers must invest in soil improvement and conservation in order to maintain the quality of their land over the long-term. The slightly greater demands posed by Marin's particular soil deficiencies would be a matter of degree.





Drainage and depth are more significant problems, particularly for orchard crops. Inadequate drainage in interior valleys might result in root rot; shallow soils on hillsides could not retain enough water to support fruit trees during the summer months. Marin's steep topography presents other problems as well. Plowing for row crops could hasten the process of erosion. More importantly, the predominance of narrow valleys in much of Marin limits the scale of agricultural operations possible in the county.

The limitation of Marin's prime soils largely to these narrow valleys aggravates the problem. Most commercial agriculture requires economies of scale to amortize costs of equipment and land. Solutions to these problems again would lie partly in the choice of crops. Orchard crops are clearly an unlikely prospect. Other crops requiring good drainage, such as Brussels sprouts, are also unpromising. Scale and intensity of operation again enter the picture. Small intense farms overcome the need for large contiguous acreage required by most commercial produce and field operations. The cooperative purchase and use of equipment among farmers of more extensive operations might also alleviate this problem. The simultaneous need for equipment at critical points in the growing cycle might limit the effectiveness of cooperatives, however. Problems of soil quality and topography could also be overcome through a careful selection of location. The variety of "microenvironments" in west Marin suggests that a combination of soil and topography suited to a given crop would exist in some areas though not in west Marin as a whole.

Land costs might also be a significant factor, particularly where speculation results in high land prices. Lease figures may give a rough comparison of the relative ability of different crops to cover expenses for land. These figures vary with the productivity of land in different counties and other factors. They are not directly applicable to Marin County. The 1972 revised leasing practices booklet of U.C. Davis's Agricultural Extension Service offers the



following comparison of annual rents per acre: Brussels sprouts in San Mateo County, a usual rent of \$60; artichokes in San Mateo County, \$60; in Monterey, \$110; broccoli in San Luis Obispo County, \$60; in Monterey, \$130; strawberries in Monterey County, \$175; in Los Angeles, \$200; grapes in Sonoma County, \$70; nursery stock in Orange County \$80-\$250; in Los Angeles County, \$160. From this rough comparison, strawberries and nursery stock appear to be most capable of covering high land costs.

Labor would be another agricultural problem, and one which Marin would share with the rest of the state. Apparently, many of the farms that account for the variety of agricultural crops in west Marin before the war were family operations. Japanese families grew peas and maintained truck farms. Italian families grew artichokes. Extra labor was provided, apparently very cheaply, by Filipino labor. Improving wages for agricultural workers would raise costs in Marin as they would throughout the state. Housing for farmworkers may also be a problem, as it is in San Mateo County.

The impact of rising labor costs will vary between crops. According to U.C. Davis's crop cost sheets, labor costs constitute 27% of the cost of growing Brussels sprouts, 39% of the cost of non-irrigated wine grapes, 51% of the cost of artichokes, and 63% of the cost of strawberries. Labor cost increases will presumably affect each crop according to its proportionate labor input. The difficulty of finding farm labor, should that become a problem, will also vary according to relative need. Presumably to the extent that labor costs are uniform throughout the industry, rising wages will not damage agriculture in Marin, except in marginal situations. A discussion of labor again raises the possibility of "alternative lifestyle" agriculture. Though labor costs, combined with other factors might price commercial agriculture out of Marin, communal owner-labor might permit economic operation.



Marketing is a final major factor affecting the viability of crop agriculture in Marin. Three aspects of marketing must be considered: marketing economics, demand, and transportation. New farms in Marin would be competing with major established agricultural centers. Such centers have several economic advantages. They can reduce packing and shipping costs through cooperative associations. Supplementary industries, such as canneries and marinated artichoke heart bottlers, can function economically in such areas, optimizing crop usage.

In addition, large groups of producers can combine to improve their marketing position. A study of the prospects for marketing Sonoma County produce remarks:

A tighter vertical coordination between production and marketing through vertical integration and contractual relationships is expected to occur... Part of this integration will take the form of grower-shipper firms which are localized in areas of production. At the same time, the size and numbers of buyers are likely to increase. In response, increasing numbers of growers are likely to take collective action to maintain or improve their competitive bargaining position.<sup>1)</sup>

Unless Marin itself became a "center" for some agricultural crop, the price received for its produce in the wholesale market place would probably fall below that of established areas.

Demand is a second marketing consideration. Fruits and vegetables receive no price supports and additional production only serves to lower prices where demand does not increase commensurately. According to U.C. Davis' Vincent Rubatzky, neither brussels sprouts nor artichokes, two otherwise promising crops for Marin, seem likely to enjoy much increase in demand. Strawberries are slightly better prospects, having increased in wholesale price nearly 15% in the last five years. From a demand standpoint, wine grapes are

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1) "Direct Marketing Opportunities...Applications for Sonoma County", U.C. Agricultural Extension Service, 1973, p. 4.





the obvious market to enter. In the past five years, average prices for standard varieties of grapes in the North Coastal Region have increased 280%. Grapes are reportedly now overplanted, however, and despite increasing demand for wine, prices may drop. Demand information on nursery crops is not available.

Transportation is a third consideration. Despite its proximity to San Francisco, Marin County may suffer high transportation costs. West Marin's roads are narrow and winding. If farms are few and far between, transportation costs will rise accordingly. San Mateo County's agricultural advisor mentioned that proximity to the San Francisco Airport is a significant advantage of the flower growing industry in that county.

Several approaches to the marketing problem exist. Choice of crops, judging from the above discussion of demand factors, is again significant. Small scale marketing cooperatives might possibly alleviate some marketing disadvantages resulting from the county's isolation. Unless agriculture became well established in the county, however, direct retail marketing would probably provide the most lucrative method of sale. The Sonoma study mentioned previously recommended direct marketing for crops grown on too small a scale for mass marketing economics. Specifically, the study suggested marketing through centralized farmers' markets -- such as the San Francisco Farmers' Market -- decentralized markets bound together through promotion and standard setting associations, or independent, dispersed direct marketing. The advantage of any of these forms would lie in increasing profits to the producer through the elimination of middlemen.

A study of the marketing area of the existing Sonoma direct marketing cooperative -- the Oak Glen Association -- found 42% of the customers of the cooperative lived within 30 miles of Oak Glen and 98% lived closer than 100 miles. Increasing recreation facilities in northern Sonoma County were



predicted to increase the number of tourists passing through the area, stimulating the direct sale market. These findings augur well for direct marketing in Marin. A 30 mile radius from Nicasio includes both San Francisco and Oakland and a potential market of over 1½ million people. A 100 mile radius includes the entire urbanized portion of the Bay Area. The recreation attractions of the Point Reyes Peninsula and the Golden Gate National Recreation Area promise to increase the number of tourists passing through the area. The quality of West Marin's roads may dampen the prospects of direct retailing somewhat.

Roadside selling, the study suggests, can be a viable principal income source. The study reads, "Oak Glen farmers decided to 'go roadside' when it became apparent to them that the apple production area was too small to allow them to stay in the wholesale business. Once they began their direct-sales program, the roadside business improved each year. In 1967, the owner of a 150 acre ranch, the largest in the area, felt that 'without the roadside stands, we couldn't stay in business.'"<sup>1)</sup>

Best selling roadside produce, according to a nationwide survey, includes apples, peaches, pears, plums, strawberries, blueberries, watermelons, cantaloupes, raspberries, blackberries, sweet corn, tomatoes, beans, and potatoes.

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<sup>1)</sup> Op. cit., p. 13.



This very general discussion of factors points out the following conclusions. Marin County is not an attractive investment for the commercial agricultural crop farmer. An investor free to choose production areas would be better advised to invest near established marketing areas where water supplies are more reliable, arable acreage more abundant, etc. Existing centers for crops suitable to Marin's environment, according to U.C. Davis's Rubatzky, still have enough uncultivated land available to meet projected increases in produce demand. However, as a sideline to existing types of enterprises or as a hobby, crop agriculture might prove to be a money-making activity. The suitability of particular crops would vary between subareas of Marin. Intensively grown crops, such as nursery crops and strawberries, appear best suited to the cool climate, limited water, high land costs, and narrow canyons that characterize much of west Marin at the present time. The lower land costs and more abundant water proposed in this report might better the prospects for less intensive crops in warmer interior valleys. Much more basic environmental data gathering, market analysis, and experimentation would have to precede more definite conclusions.

### 3. Family Farms and Cooperatives<sup>1)</sup>

This section describes three family farm operations, each of a different type, currently going on in Marin County. The information was gathered by interviewing a member of each operation.

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<sup>1)</sup> From "The Preservation of Agricultural Land in Marin County for Open Space and Agricultural Uses: Some Possibilities," a paper for CP299, Department of City and Regional Planning, U.C. Berkeley, by Patricia Willis, Spring Quarter, 1973.





The first farm is a traditional family farm operated by the father who has always had an outside full-time job, his wife who also worked full-time outside until three years ago when illness forced her to retire, and by their three sons as soon as they were old enough to help. It is the last family farm in the town. The family owns 50 acres and rents 150. They now raise replacement heiffers although the farm was originally a dairy farm. The main reason that they went out of dairying was that a large milk company took over the transporting of milk and decided that the distance was too great and the roads too poor to drive for one dairy operation. They then decided to go into raising replacement heiffers.

Now the family feels it is being squeezed out of its present operation by a number of problems:

a. The high cost of raising heiffers in comparison to the income derived from them. On a small farm, it is impossible to raise enough heiffers for the small profit brought by each to justify the expense. Expenses typically amount to \$360 on a heiffer than can be sold for \$500.

b. They cannot afford to purchase more land at a reasonable price to add to their 50 acres. ("Newcomers to the town are buying land at outrageous prices.")

c. Without more money to purchase land in order to increase the replacement heiffer stock, it will be impossible to keep the farm going.

d. Family disillusionment with the lack of income and opportunity on the farm. Two brothers are buying a restaurant in town and the third is moving to Oregon. The father will retire very soon and will not be able to manage the farm alone.

The only way there is a chance for the operation to survive is for a governmental agency to create some type of assistance program to enable such families to



retain their land. Without such a program, the family interviewed feels that it is inevitable that the land will have to be sold for subdivisions.

Rancho Baulines is another type of "family" farm operation. It is a 1,350 acre ranch founded in 1860. It was owned by the family of Mrs. Ruth Rathbone who currently lives in part of the main ranch house with her husband, who is a contractor. Her family sold the ranch several years ago to Nicholas Charney, former publisher of the Saturday Review. Mr. Charney agreed to let the Rathbones continue to live on the ranch as tenants and caretakers. There were also tentative plans for Mr. Rathbone and two other ranch members to build a house on the property for Mr. Charney.

Rancho Baulines began as a dairy and remained in operation until 15 years ago when it was leased by the family to another dairyman. After the dairy closed but prior to the purchase of it by Mr. Charney, it was used for grazing.

The principal activity of the ranch is boarding and renting horses, for which they charge \$60 a month. The owners of the horses, as part of the service, may ride their horses on the ranch's many trails. During Easter time, the ranch sponsors a long-distance school for endurance. During the school, all participants camp at the ranch. Meals are served by the families living at Rancho Baulines in a large common meeting room.

Another activity is organic farming. This is done by a group which lives in a teepee and dome situated some distance from the ranch house. During the garden season, the crop earns \$125 to \$150 per week. One person has a beef cattle operation; currently he has 45 cattle grazing on 30 acres of horse land.



The ranch currently is scheduled to be taken by the National Park Service for the Golden Gate National Park. As yet, there are no concrete plans for the purchase. President Nixon has not released the funds which have been allocated for the purchase. Mrs. Rathbone believes that it will be at least 2 or 3 years before anything is actually done by the government. At the time of the interview, no master plan had been drafted.

Rancho Baulines is not a cooperative farm, commune or a family farm in the traditional sense. It bears some similarities to a cooperative or communal farm, but it did not start with that intent. It started with two families renting parts of the ranch houses. Basically, the group lives on the proceeds of the farm operations and personal savings. Only one person, a large animal veterinarian, has an outside job.

Basically, then, Rancho Baulines cannot be considered a traditional family farm, commune or cooperative. Most of the ranch members have independent sources of income which allow them to live reasonably well without relying on jobs outside the ranch for their livelihoods. The Rathbones have stock and other income sources will enable them to pay their bills and subsist. One member of the ranch is an heiress and will eventually have a considerable income. The other manage to live on the organic garden products and by selling individual crafts as well as the income from the horse boarding operation. All of the members of the ranch would like to continue to live on the ranch after the Park Service takes over and will remain on the ranch until the government decides what is to be done.

Rancho Baulines is an example of how individuals can work cooperatively in a number of areas while at the same time caring for the land and providing an alternative agriculture use of the land.





The third interview was conducted with a member of a very new and exciting kind of farm cooperative group. The group hopes that this cooperative will serve as a model for future developments which will provide an alternative to traditional agricultural farms.

A wealthy individual who was interested in taking land out of speculation and "putting it to environmentally sound purposes supportive of life" recently financed 48 acres at \$18,000 a share for nine families. These families comprise a different kind of farm cooperative; their primary commitment is to use the land for environmentally sound purposes.

The 48 acre farm has been permanently taken out of the speculative market. There is a legally binding agreement among the members of the group which provides that if a member decides to sell his share, it can only be sold at one-half of the original cost of the share plus the cost of the family's house if one has been built. A new share owner must adhere to the same agreement. Eventually the land would have no monetary value.

The group has set up a land trust fund to which they are repaying the \$18,000 price of an original share. This fund will be used to purchase land "for living rather than for profit." The group hopes the fund will finance similar ventures for other groups.

The farm will produce vegetables, fruit, herbs, Christmas trees, honey, grapes, and hay. Christmas trees have been planted and will be ready for cutting in 3 to 4 years. A wide variety of vegetables, a fruit orchard, and herbs also have been planted. The irrigation for the land is from a creek on the site. The group plans to experiment with windmills and water wheels as a source of power and electricity. There also are plans to operate a cabinet shop and for small-scale husbandry.



All nine family currently live in a nearby town. Each family plans to build a house on the land. The only other structures on the land will be those necessary for the farm's operations. At the time of this interview, an architecture class from U.C. Berkeley was building a barn for the group as its class project.

The families represent a wide spectrum of ages, occupations, and interests. The age range is from 22 to 60 years old, and there are fifteen children. The interests and/or occupations cover a diverse range, including a public utilities director, photographers, agricultural specialists, writer, illustrator, school teacher, carpenters, and welfare mothers.

This agricultural alternative may be very attractive to many people who are concerned and committed to the preservation of the environment, who are concerned with preserving agricultural lands, and who are seeking a life-style with an agricultural base. If this group can get the kind of county and local support which it needs, this will be a viable alternative to the existing agricultural operations in Marin County.

#### 4. Recreational Uses of Agricultural Land<sup>1)</sup>

In many parts of Marin County there will be increasing demands for additional recreational activities and especially for recreation-related services such as camp sites, bike hostels, and guest ranches. The greatest need for such facilities will be in the Tomales Bay/Point Reyes National Seashore area. This demand was established in the Tomales Bay Environmental Study, June, 1972. In the section titled "Recreation and Visitor Demand in the Tomales Bay

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<sup>1)</sup>Portions of this section were taken from "The Preservation of Agricultural Land in Marin County for Open Space and Agricultural Uses: Some Possibilities," a paper by Bill Dillinger and Trish Willis for CP 299, Department of City & Regional Planning, University of California, Berkeley, Spring Quarter, 1973.



Area," it is reported that "more recreational activities of a relatively passive nature are needed (camping, bicycling, nature trails, etc.)..." Many of these recreational activities could provide alternative uses of agricultural land as well as supplemental or alternative incomes to farms which are currently being marginally operated.

There are many recreational uses which would provide such incomes. Camp sites, bike hostels and guest ranches have already been mentioned. The list could also include horse boarding ranches, vacation farm camps, fishing ponds, hunting clubs,<sup>1)</sup> educational farms (i.e., as a laboratory for high school students interested in going into agriculture, as well as a way of providing a rural experience for urban school students).

This section will deal with some of the above recreational ventures which are compatible with agriculture and may afford an agriculturist the necessary additional income to maintain the level of viability required to stay on the land.

Commercial camping facilities are one such venture. John Y. Stechman, Associate Professor in Natural Resources Management at California State Polytechnic University, reports that:

Even though the 'double standard' in campground construction codes force the private developer to meet much more stringent requirements and higher costs than most government organizations, numerous commercial recreational businesses such as 'Kampgrounds of America' (KOA) and 'Crazy Horse Campgrounds' are thriving. So are many enterprises on farms and ranches.

In keeping with county open space and agricultural preservation goals, such campgrounds would have to be planned so as to functionally and aesthetically

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<sup>1)</sup> See Appendix for five articles by John Stechman on Ranch Recreation in California, taken from California Cattleman, April-August 1973. The articles cover motorcycling, hunt clubs, fishing, camping, swimming, hiking, boating, and picnicking.





complement the existing agricultural environment. Sites would have to be chosen for their unobtrusiveness rather than, as an operator might desire, for their visibility. Interference with nearby agriculture and increased service demands would have to be considered.

Five recreational ventures which have been explored by the University of California Agricultural Extension Service are a) hunting areas or shooting preserves; b) fishing enterprises; c) riding stables; d) vacation farms or ranches; and e) camp or picnic grounds.<sup>1)</sup> These five categories were found to be most compatible with the kind of agricultural operation in Marin County. The data collected on the five activities resulted from the study of the operations of 67 landowners. Each venture had been in operation for at least a season; two or three had been around since the early 1900's. The hunting or fishing enterprises were seasonal. Most of the enterprises were membership clubs.

Almost 60% of the enterprises were self-owned, 17% were corporately owned, and 11% were partnerships. 7% qualified as cooperative associations. 70% of the owners managed their own enterprises. The remaining 30% had salaried managers or a profit sharing arrangement.

One example of a compatible recreational venture is a sheep ranch in a coastal area of California which operates a deer club. In hunting season the sheep are restricted to a certain grazing area and hunting is restricted to a deer habitat area.

Another example is a vacation farm or recreation ranch. Such an operation functions as day camps and guest ranches; facilities are available for children

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<sup>1)</sup> The material which follows has been taken from Outdoor Recreation: Can It Pay? U.C. Agricultural Extension Service Booklet, MA-8.



as well as for families to spend their vacations on an actual ranch or farm. In similar operations on the East Coast, children are sent to vacation farms in the same way they are sent to camps.

According to the Agricultural Extension Service report, these ventures have not been without their problems. The report cited insufficient demand, difficulty in becoming known, liability claims, and damage to property as major problems faced by operators of recreational enterprises. Several operators had also suffered increases in their tax assessments as a result of their sideline. In spite of these problems, nearly 60% of the ranchers showed a profit in their first year of operation, though 27% showed no profit until after the third year of operation.

Table IV-3 shows the types and number of operations along with the capital investment, annual income and expenses, and returns to family labor and management. The acres of land and the returns per acre are also given. The capital investment data include the value of all facilities except land used in operating the recreation enterprise. The value of land was not included because, in many cases, it was impossible to separate the land involved in the recreation enterprise from that of the regular farming and ranching enterprise. In other cases, the acreage or the value of the land was not reported.

Vacation farms and ranches shows the highest investment -- mainly for buildings, swimming pools, saddle horses, and equipment -- of any of the enterprises. Except for the one camp and picnic grounds enterprise reported, deer clubs showed the smallest average investment.

Annual income includes all earnings from the recreational enterprises. Expenses include hired labor, utilities, advertising, repairs, taxes, insurance, license fees, and many other cash items like the proportionate share of property taxes. Depreciation of buildings, equipment, and general recreation facilities was included, as was interest at 6% figured on one-half the cost of the capital items. No interest was charged to the land.



TABLE IV-3

## Financial Summary -- Outdoor Recreation Study.

| Enterprise                | Number of Records | Capital Investment not Including Land |                      | Income   |                    | Expenses * |                  | Returns to Family Labor, Management, and Land |                       | Acres    |                 | Return per Acre of Land |                     |
|---------------------------|-------------------|---------------------------------------|----------------------|----------|--------------------|------------|------------------|---|-----------------------|----------|-----------------|-------------------------|---------------------|
|                           |                   | Average                               | Range                | Average  | Range              | Average    | Range            | Average                                       | Range                 | Average  | Range           | Average                 | Range               |
| Deer clubs                | 20                | \$ 3,275                              | \$1,000 to \$ 11,000 | \$ 1,783 | \$ 185 to \$ 6,200 | \$ 1,224   | \$ 0 to \$ 7,635 | \$ 559  | \$ -3,320 to \$ 4,740 | 4,307.0  | 960 to 10,000   | \$ 0.14                 | \$ -0.33 to \$ 1.19 |
| Mixed hunting clubs       | 12                | 10,581                                | 150 to 48,100        | 9,222    | 1,100 to 45,685    | 6,850      | 155 to 35,788    | 2,362   | -2,313 to 8,897       | 12,423.0 | 1,300 to 60,000 | 0.25                    | -0.04 to 5.93       |
| Pheasant clubs            | 8                 | 13,413                                | 100 to 71,525        | 36,615   | 1,250 to 252,195   | 26,273     | 324 to 184,481   | 10,342  | -586 to 67,714        | 1,186.0  | 744 to 1,500    | 17.44                   | 2.53 to 91.01       |
| Waterfowl clubs           | 7                 | 4,750                                 | 2,000 to 7,500       | 4,079    | 500 to 9,500       | 1,470      | 79 to 4,250      | 2,609   | -2,260 to 6,673       | 4,300.0  | 1,200 to 10,000 | 1.42                    | -0.23 to 5.21       |
| Fishing clubs and ponds   | 5                 | 29,646                                | 1,000 to 116,011     | 25,112   | 558 to 71,695      | 18,375     | 2,133 to 64,409  | 6,736   | -1,576 to 19,115      | 20.0     | 1 to 40         | 418.41                  | -52.00 to 2,827.00  |
| Vocation farms            | 6                 | 84,850                                | 6,200 to 170,000     | 21,993   | 7,000 to 55,200    | 19,756     | 3,718 to 45,003  | 2,227   | -3,973 to 10,197      | 324.0    | 20 to 845       | 6.87                    | -39.73 to 509.65    |
| Mixed hunting and fishing | 3                 | —                                     | —                    | 3,167    | 750 to 5,000       | 714        | 0 to 1,142       | 2,453   | -250 to 5,000         | 2,700.0  | 700 to 4,400    | 0.91                    | -0.08 to 7.14       |
| Fish raising              | 2                 | 45,000                                | —                    | 2,271    | 400 to 4,142       | 3,984      | 3,370 to 4,598   | -1,713  | -456 to -2,970        | —        | —               | —                       | —                   |
| Riding stable             | 1                 | 40,500                                | —                    | 47,175   | —                  | 51,078     | —                | -3,903  | —                     | 2.5      | —               | -1,561.00               | —                   |
| Pheasant raising          | 1                 | 8,785                                 | —                    | 9,000    | —                  | 3,129      | —                | 5,871   | —                     | 7.0      | —               | 838.71                  | —                   |
| Bow and arrow club        | 1                 | —                                     | —                    | 175      | —                  | —          | —                | 175   | —                     | 30.0     | —               | 5.83                    | —                   |
| Camp and picnic grounds   | 1                 | 1,200                                 | —                    | 1,200    | —                  | 998        | —                | 202   | —                     | 2,900.0  | —               | 0.07                    | —                   |

\* Includes all cash expenses related to recreation enterprise, the proportionate share of property taxes, and depreciation. Interest at 6% is charged on all invested capital except land.

Costs reflect 1968-69 prices.

Source: Outdoor Recreation: Can It Pay?,  
U.C. Agricultural Extension Service Booklet  
MA-8.





The difference between annual income and annual expenses is termed returns to family labor, management, and land. The average return per acre was figured by dividing total returns from all of the enterprises within a class by the total acres reported in the enterprise in that class.<sup>1)</sup>

The report concluded that:

- 1) With proper management, many kinds of recreational ventures can increase the income of the farmer.
- 2) Because of the wide range in returns for family labor, management and land, more research needs to be done.
- 3) For a successful recreation venture, one must want to, and be able to, work with people. Other things include an attractive facility, good publicity, proximity to population centers, and excellent management and financing.<sup>2)</sup>

#### 5. Estate Ranching

Estate ranching is a final alternative open space land use. The term applies chiefly to ranchers who, possessing an outside income, can afford to invest and operate with minimal or negative returns. In the tradition of the gentleman farmer, such a rancher might typically possess well in excess of 60 acres and contract out the labor requirements of his operation.

Dr. Glenn Spurlock, U.C. Davis sheep specialist, has suggested a less expensive approach, better suited to a cluster development policy. In Dr. Spurlock's scheme, property owners would form a corporation, as is common in condominium developments with commonly owned facilities. The

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<sup>1)</sup> Op. cit., p. 6.

<sup>2)</sup> For further financial information, there is a short financial statement from the first six ventures shown in Table 1, Appendix 1. There is also a reference list in Appendix 2, providing more sources of information for rural recreation.



corporation would then hire management and labor and share profits among its investors. Homesites would be clustered and the remaining land pooled to enable ranching on a large scale. Such a proposal would be feasible with both 60-acre lot subdivisions and with formal clustering procedures described previously. This system would enable cluster residents to offset the costs attached to individual parcels by a large acreage developer who is faced with the prospect of disposing of land lacking development rights.

Dairies, whose production is disrupted by urban nuisances and whose odors and flies may offend urban sensibilities, would be inappropriate in such a mixed use situation. Dr. Spurlock argues that sheep, because they do not require much management attention except during lambing and because they are compatible with people, would be most suited to such an arrangement. The incompatibility of sheep and dogs would remain a problem. In addition to offsetting purchase costs, livestock grazing would be desirable as a method of keeping brush down and reducing the fire hazard inherent in West Marin's dry summer.

The market demand for gentleman farms or corporately managed ranches is questionable. The rural beauty of West Marin, along with its proximity to the metropolitan Bay Area, would appear to attract such investors. Interviews with real estate companies revealed that most recent West Marin property buyers have sought wooded homesites or investment land.<sup>1)</sup> A definite assessment of the potential extent of non-professional ranches would require a market analysis beyond the scope of this report.

## 6. Conclusions

Not all the alternatives discussed in this section are equally suitable to both the agricultural zone and the Tomales Bay-Nicasio zone. Turkeys, for

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<sup>1)</sup>This generalization excludes the rather anomalous recent purchases by Point Reyes dairymen and Synanon.



example, are highly incompatible with residential development. Extensive irrigation-requiring crop agriculture would be more suited to the generally gentler topography of the agricultural zone and to the irrigation supply system recommended for that zone. More intensive agriculture, however, is equally suited to both zones. The suitability of recreation to one zone or the other would depend on the specific type of operation. Similarly, communal or family farms are possible in either zone, as are purebred operations. The non-professional rancher, though equally viable in either zone, would be better suited to the Nicasio-Tomales Bay zone.







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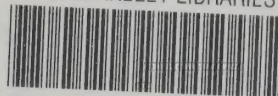
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